
BRAKE SYSTEM

PRECAUTION

NOTICE:

- Take extra care to replace each part properly. Improper installation or repair could affect the performance of the brake system and cause a driving hazard.
- It is very important to keep the brake system parts and the work area clean when replacing the brake system.
- If the vehicle is equipped with a mobile communication system, refer to the Precautions in the INTRODUCTION section.

BR-2

BRAKE – BRAKE SYSTEM

PROBLEM SYMPTOMS TABLE

Use the table below to help determine the cause of the problem symptom. The potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

Brake system

Symptom	Suspected Area	See page
Low pedal or spongy pedal	1. Fluid leaks in brake system	-
	2. Air in brake system	BR-3
	3. Piston seals (worn or damaged), for front	BR-25
	4. Piston seals (worn or damaged), for rear	BR-32
	5. Brake master cylinder (faulty)	BR-13
	6. Booster push rod (adjustment necessary)	BR-15
Brake drag	1. Brake pedal free play (minimal)	BR-7
	2. Parking brake lever travel (adjustment necessary)	PB-1
	3. Parking brake wire (sticking)	PB-7
	4. Parking brake shoe clearance (adjustment necessary)	PB-1
	5. Pad (cracked or distorted), for front	BR-26
	6. Pad (cracked or distorted), for rear	BR-33
	7. Piston (stuck or frozen), for front	BR-25
	8. Piston (stuck or frozen), for rear	BR-32
	9. Booster push rod (adjustment necessary)	BR-15
	10. Vacuum leaks in brake system	BR-19
	11. Brake master cylinder (faulty)	BR-13
Brake pull	1. Piston (stuck or frozen), for front	BR-25
	2. Piston (stuck or frozen), for rear	BR-32
	3. Pad (oily, cracked or distorted), for front	BR-26
	4. Pad (oily, cracked or distorted), for rear	BR-33
	5. Front disc (scored)	BR-26
	6. Rear disc (scored)	BR-33
Brake pedal is depressed firmly but brake is insufficient	1. Fluid leaks in brake system	-
	2. Air in brake system	BR-3
	3. Pad (worn, cracked, distorted, oily or glazed), for front	BR-26
	4. Pad (worn, cracked, distorted, oily or glazed), for rear	BR-33
	5. Front disc (scored)	BR-26
	6. Rear disc (scored)	BR-33
	7. Booster push rod (adjustment necessary)	BR-15
	8. Vacuum leaks in brake system	BR-19

BR

BRAKE – BRAKE SYSTEM**BR-3**

Symptom	Suspected Area	See page
Noise from brakes	1. Pad (worn, cracked, distorted, oily or glazed), for front	BR-26
	2. Pad (worn, cracked, distorted, oily or glazed), for rear	BR-33
	3. Installation bolt (loose), for front	BR-24
	4. Installation bolt (loose), for rear	BR-31
	5. Front disc (scored)	BR-26
	6. Rear disc (scored)	BR-33
	7. Pad support plate (loose), for front	BR-26
	8. Pad support plate (loose), for rear	BR-33
	9. Sliding pin (worn), for front	BR-25
	10. Sliding pin (worn), for rear	BR-32
	11. Anti squeal shim (damaged), for front	BR-24
	12. Anti squeal shim (damaged), for rear	BR-31

BR

BRAKE FLUID

BLEEDING

HINT:

If any work is performed on the brake system or if air in brake lines is suspected, bleed air from the brake system.

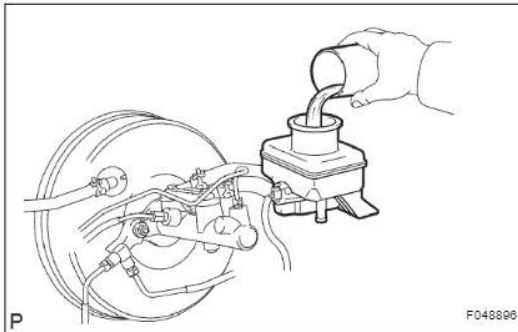
NOTICE:

Wash off brake fluid immediately if it comes in contact with any painted surface.

1. FILL RESERVOIR WITH BRAKE FLUID

Fluid:

SAE J1703 or FMVSS No. 116 DOT3



2. BLEED AIR FROM BRAKE MASTER CYLINDER

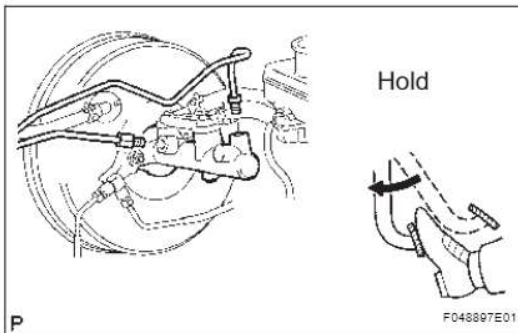
HINT:

If the master cylinder has been disassembled or if the reservoir becomes empty, bleed air from the master cylinder.

- (a) Using SST, disconnect the 2 brake lines from the master cylinder.

SST 09023-00101

- (b) Slowly depress and hold the brake pedal.



- (c) Cover the outer holes with your finger, and release the pedal.

- (d) Repeat the 2 previous steps 3 or 4 times.

- (e) Using SST, connect the 2 brake lines to the master cylinder.

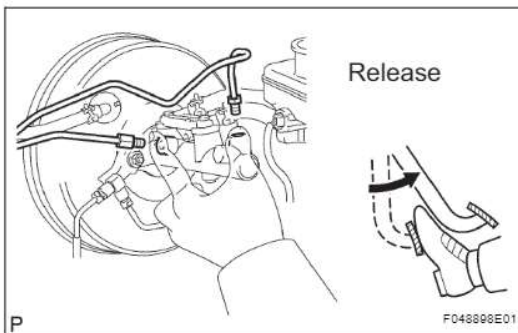
SST 09023-00101

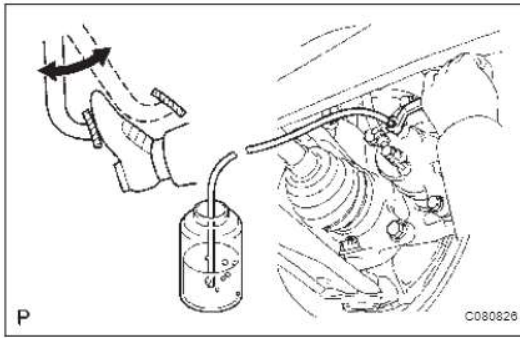
Torque: 15 N*m (155 kgf*cm, 11 ft.*lbf) without SST

14 N*m (143 kgf*cm, 10 ft.*lbf) with SST

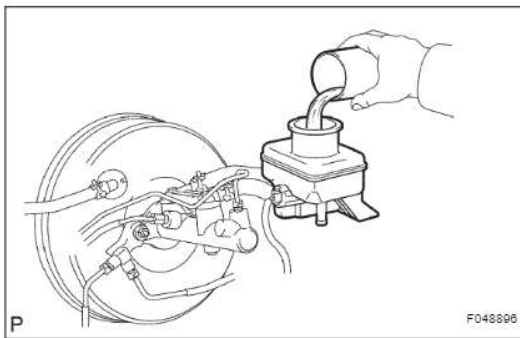
HINT:

Use a torque wrench with a fulcrum length of 30 cm (11.81 in.).



BR-4**BRAKE – BRAKE FLUID****3. BLEED AIR FROM BRAKE LINE**

- (a) Remove the bleeder plug cap.
- (b) Connect the vinyl tube to the bleeder plug.
- (c) Depress the pedal several times, and then loosen the bleeder plug with the pedal depressed.
- (d) When fluid stops coming out, immediately tighten the bleeder plug. Then release the pedal.
- (e) Repeat the 2 previous steps until all the air in the brake fluid is gone.
- (f) Tighten the bleeder plug.
Torque: 8.3 N*m (85 kgf*cm, 74 in.*lbf)
- (g) Install the cap.
- (h) Bleed air from the brake line for each wheel by repeating the above procedures.

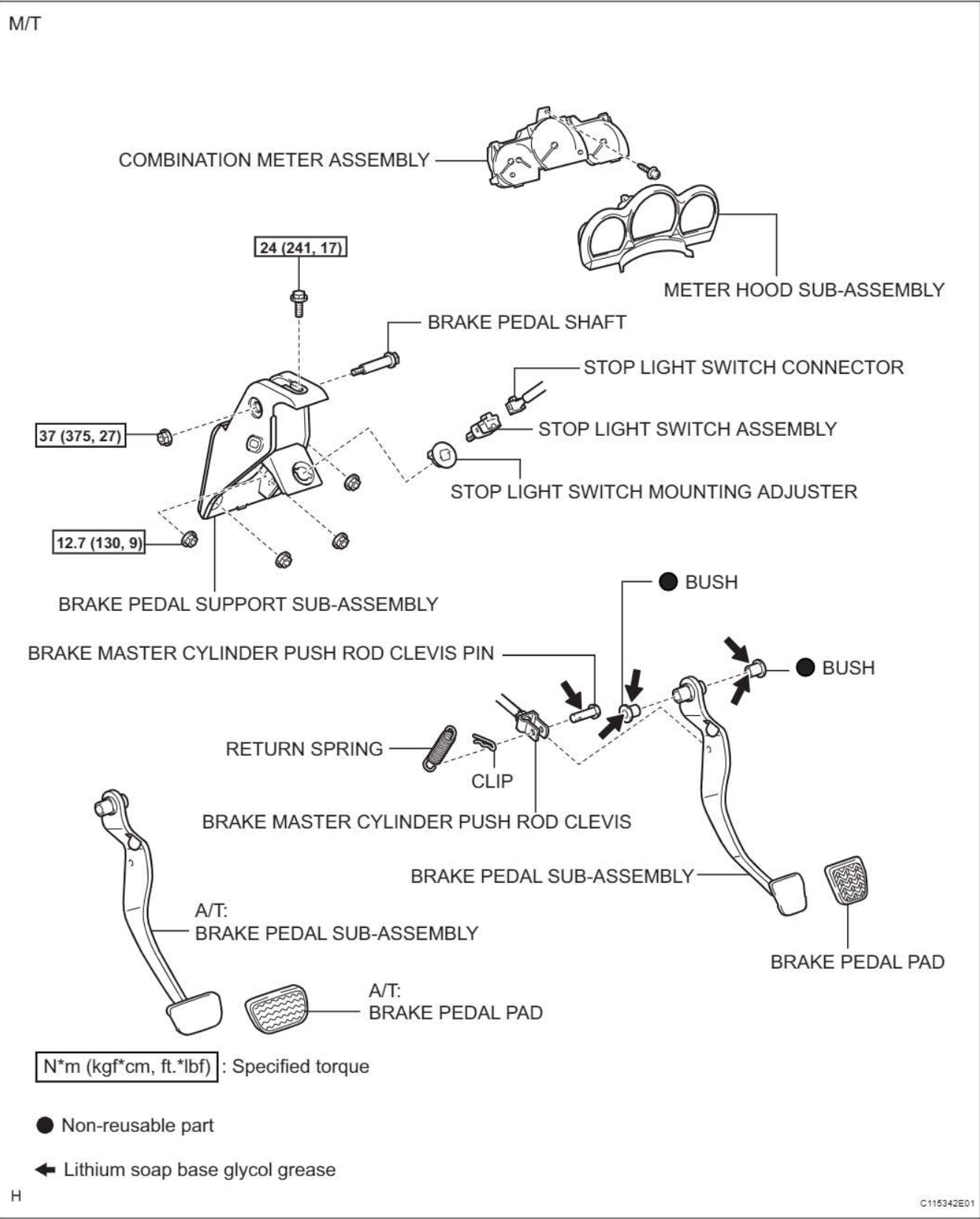
**4. CHECK BRAKE FLUID LEVEL IN RESERVOIR**

- (a) Check the fluid level and add fluid if necessary.

Fluid:**SAE J1703 or FMVSS No 116 DOT3**

BRAKE PEDAL

COMPONENTS



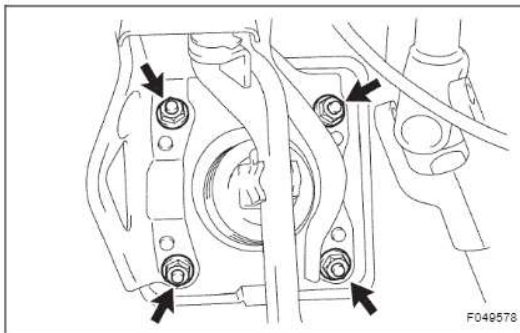
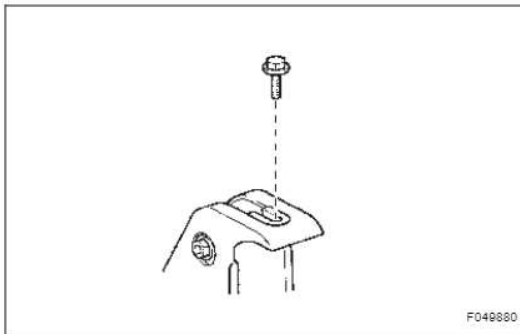
BR-6**BRAKE – BRAKE PEDAL****REMOVAL**

1. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**

CAUTION:

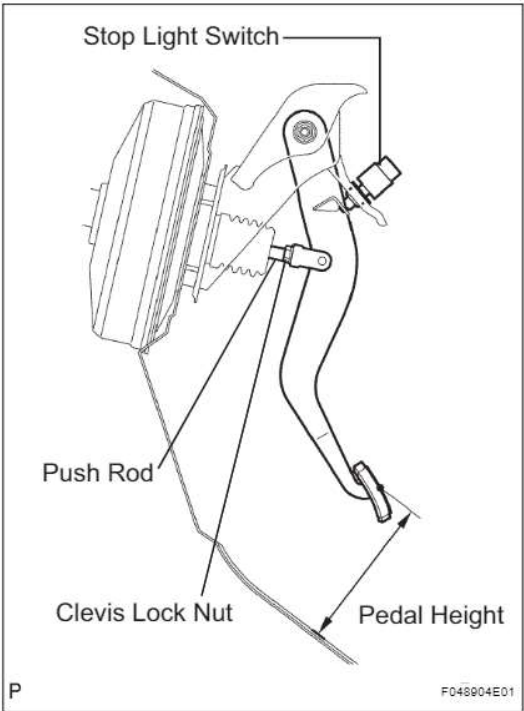
Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.

2. **REMOVE METER HOOD SUB-ASSEMBLY** (See page [ME-45](#))
3. **REMOVE COMBINATION METER ASSEMBLY** (See page [ME-45](#))
4. **DISCONNECT BRAKE MASTER CYLINDER PUSH ROD CLEVIS**
 - (a) Remove the return spring.
 - (b) Remove the clip and clevis pin.
 - (c) Disconnect the push rod clevis from the brake pedal.
5. **REMOVE BRAKE PEDAL SUPPORT SUB-ASSEMBLY**
 - (a) Disconnect the stop light switch connector.
 - (b) Disconnect the wire harness clamp from the pedal support.
 - (c) Remove the bolt from the pedal support.



- (d) Remove the 4 nuts and pedal support.
6. **REMOVE BRAKE PEDAL SUB-ASSEMBLY**
 - (a) Remove the nut, brake pedal shaft and brake pedal.
 - (b) Remove the 2 bushes from the brake pedal.
7. **REMOVE STOP LIGHT SWITCH ASSEMBLY**
 - (a) Turn the switch counterclockwise and remove it.
 - (b) Remove the mounting adjuster from the pedal support.
8. **REMOVE BRAKE PEDAL PAD**

BR



ADJUSTMENT

1. CHECK AND ADJUST BRAKE PEDAL HEIGHT

(a) Check the pedal height.

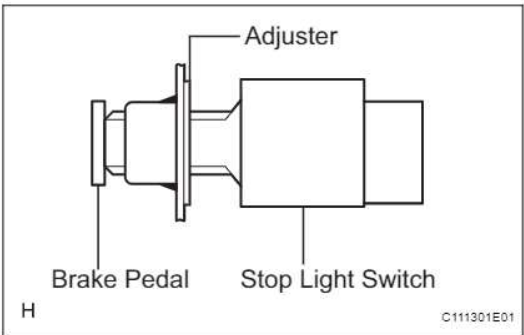
Standard brake pedal height from asphalt sheet

Model	Specified Condition
M/T	146.1 to 156.1 mm (5.752 to 6.146 in.)
A/T	146.9 to 156.9 mm (5.784 to 6.177 in.)

(b) Adjust the pedal height.

- (1) Disconnect the connector from the stop light switch.
- (2) Remove the switch.
- (3) Loosen the push rod clevis lock nut.
- (4) Adjust the pedal height by turning the push rod.
- (5) Tighten the clevis lock nut.

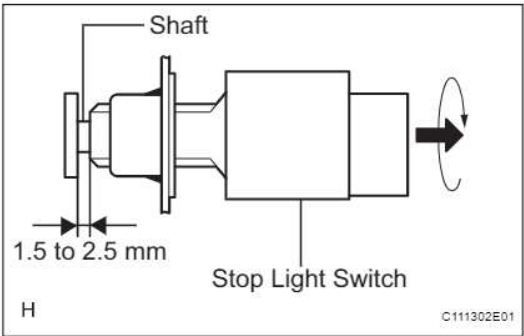
Torque: 26 N*m (265 kgf*cm, 19 ft.*lbf)



- (6) Insert the switch into the adjuster until it slightly touches the pedal.

NOTICE:

Do not depress the pedal.



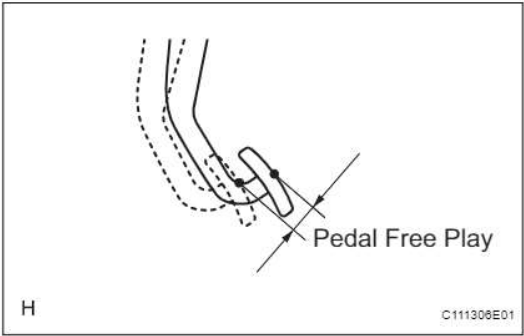
- (7) Turn the switch a quarter turn clockwise.
- Torque: 1.5 N*m (15 kgf*cm, 13 in.*lbf) or less

NOTICE:

Do not depress the pedal.

- (8) Connect the connector to the switch.
- (9) Check the switch clearance.

Standard stop light switch clearance:
1.5 to 2.5 mm (0.059 to 0.098 in.)



2. CHECK BRAKE PEDAL FREE PLAY

- Stop the engine. Depress the pedal several times until there is no vacuum in the booster. Then release the pedal.
- Depress the pedal until resistance is felt.
- Check the pedal's free play by measuring the distance between the position in the previous step and the pedal's released position.

Standard pedal free play:

1.0 to 6.0 mm (0.039 to 0.236 in.)

BR-8

BRAKE – BRAKE PEDAL

If the free play is not as specified, check the switch clearance in the next step.

If the free play is as specified, proceed to the "check brake pedal reserve distance" procedure.

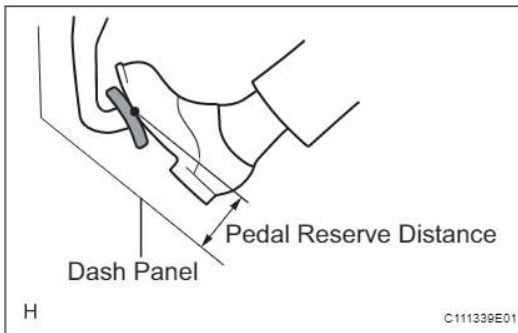
- (d) Check the switch clearance.

Standard stop light switch clearance:

1.5 to 2.5 mm (0.059 to 0.098 in.)

If the clearance is not as specified, adjust the clearance and recheck the pedal's free play.

If the clearance is as specified, troubleshoot the brake system and proceed to the "check brake pedal reserve distance" procedure.



3. CHECK BRAKE PEDAL RESERVE DISTANCE

- (a) Release the parking brake lever. Start the engine.
- (b) Depress the pedal and check the pedal reserve distance.
 - (1) Depress the pedal with a force of 490 N (50 kgf, 110 lbf).
 - (2) Measure the distance between the pedal and dash panel shown in the illustration.

Standard pedal reserve distance:

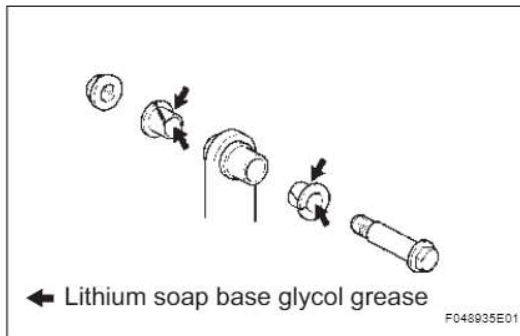
More than 90 mm (3.54 in.)

If the distance is not as specified, troubleshoot the brake system.

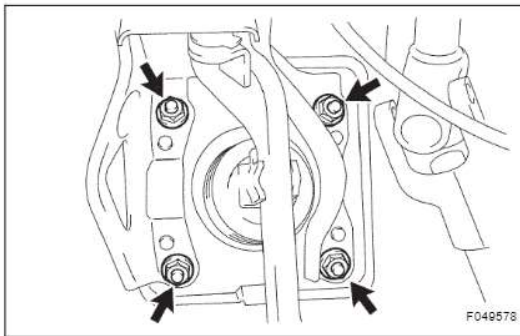
BRAKE – BRAKE PEDAL**BR-9****INSTALLATION****1. INSTALL BRAKE PEDAL PAD****2. INSTALL BRAKE PEDAL SUB-ASSEMBLY**

- (a) Apply lithium soap base glycol grease to 2 new bushes.
- (b) Install them to the brake pedal.
- (c) Install the brake pedal to the pedal shaft with the nut and brake pedal shaft.

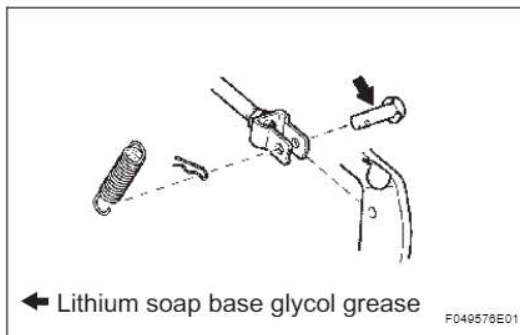
Torque: 37 N*m (375 kgf*cm, 27 ft.*lbf)

**3. INSTALL BRAKE PEDAL SUPPORT SUB-ASSEMBLY**

- (a) Install the pedal support with the 4 nuts.
Torque: 12.7 N*m (130 kgf*cm, 9 ft.*lbf)
- (b) Install the bolt to the support.
Torque: 24 N*m (241 kgf*cm, 17 ft.*lbf)

**4. CONNECT BRAKE MASTER CYLINDER PUSH ROD CLEVIS**

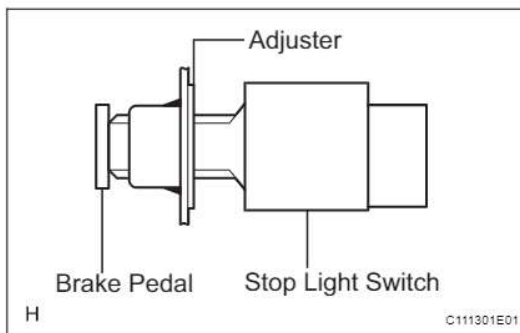
- (a) Apply lithium soap base glycol grease to the clevis pin.
- (b) Install the push rod clevis with the clevis pin and clip.
- (c) Install the return spring.

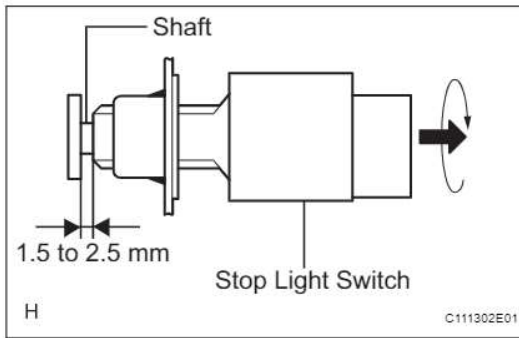
**5. INSTALL STOP LIGHT SWITCH ASSEMBLY**

- (a) Install the mounting adjuster to the pedal support.
- (b) Insert the switch into the mounting adjuster until it slightly touches the pedal.

NOTICE:

Do not depress the pedal.

**BR**

BR-10**BRAKE – BRAKE PEDAL**

- (c) Turn the switch a quarter turn clockwise.

Torque: 1.5 N*m (15 kgf*cm, 13 in.*lbf)

NOTICE:

Do not depress the pedal.

- (d) Connect the wire harness clamp to the pedal support.
 (e) Connect the switch connector to the switch.
 (f) Check the switch clearance.

Standard stop light switch clearance:

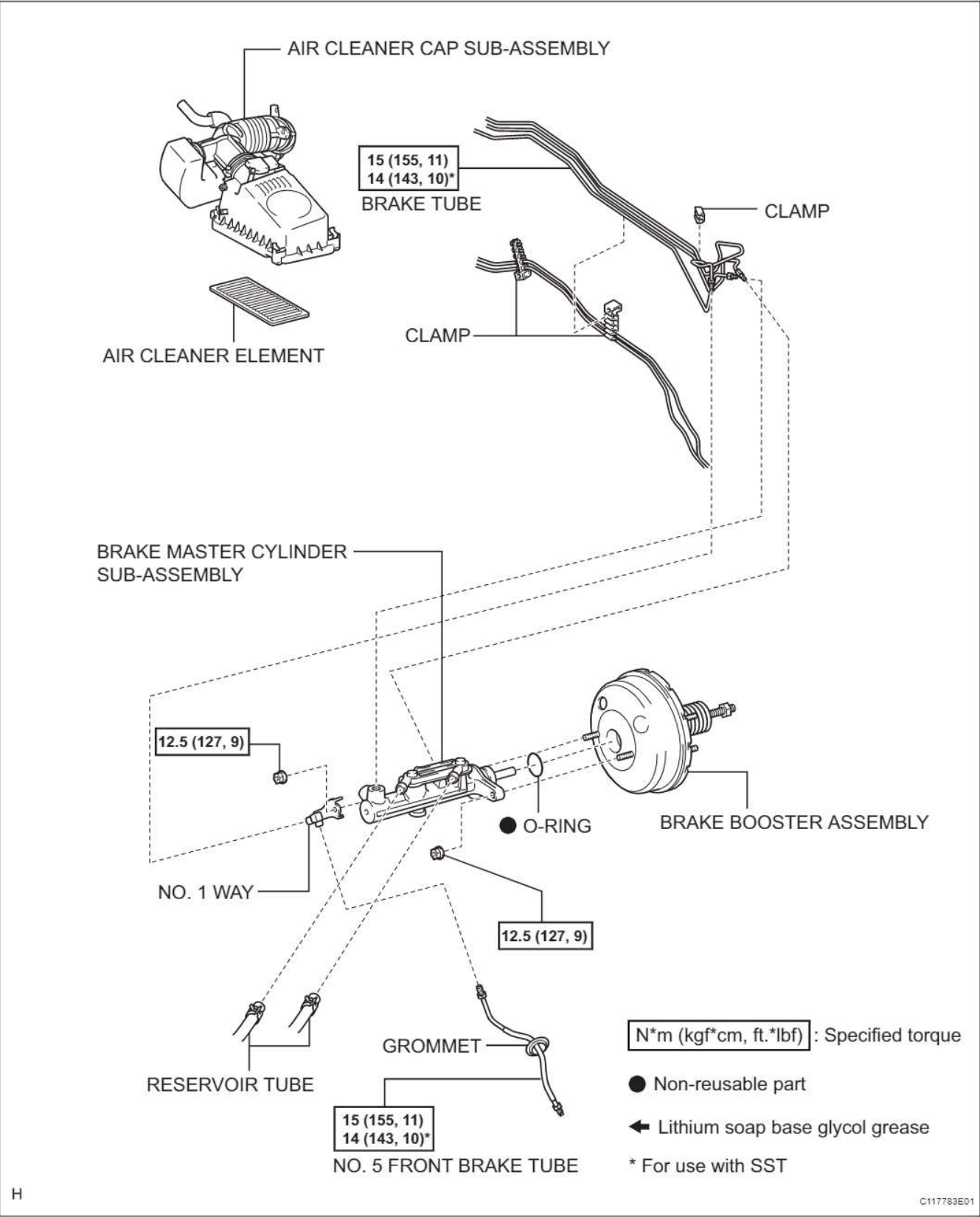
1.5 to 2.5 mm (0.059 to 0.098 in.)

6. **CHECK AND ADJUST BRAKE PEDAL HEIGHT** (See page [BR-7](#))
7. **CHECK BRAKE PEDAL FREE PLAY** (See page [BR-7](#))
8. **CHECK BRAKE PEDAL RESERVE DISTANCE** (See page [BR-8](#))
9. **INSTALL COMBINATION METER ASSEMBLY** (See page [ME-45](#))
10. **INSTALL METER HOOD SUB-ASSEMBLY** (See page [ME-46](#))
11. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**
12. **PERFORM INITIALIZATION**
 - (a) Perform initialization (see page [IN-23](#)).

NOTICE:
 Certain systems need to be initialized after disconnecting and reconnecting the cable from the negative (-) battery terminal.

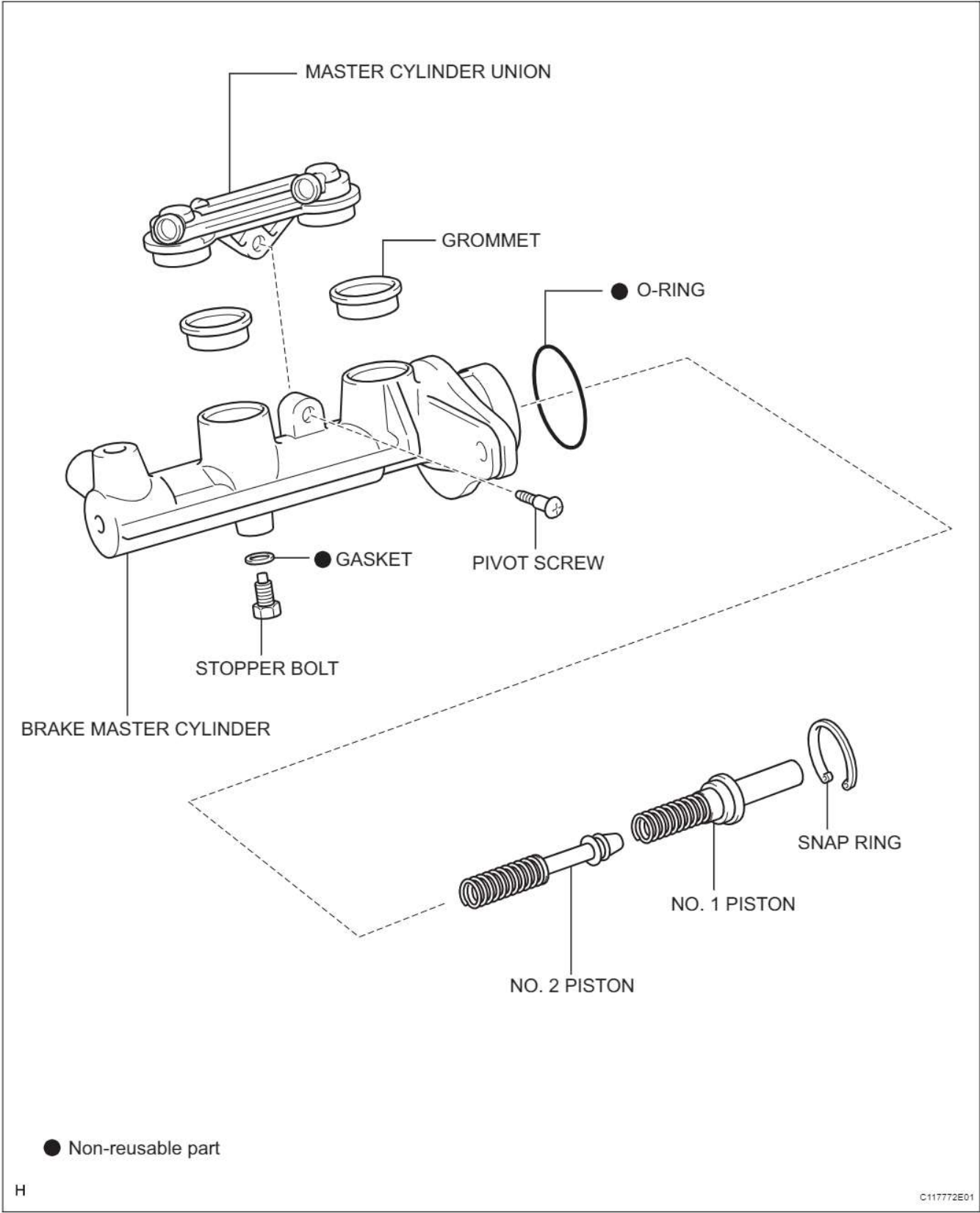
BRAKE MASTER CYLINDER

COMPONENTS



BRAKE – BRAKE MASTER CYLINDER

BR-11



BR

BR-12**BRAKE – BRAKE MASTER CYLINDER****REMOVAL****1. DRAIN BRAKE FLUID****NOTICE:**

Wash off brake fluid immediately if it comes in contact with any painted surface.

2. REMOVE FRONT WIPER ARM HEAD CAP (See page [WW-4](#))**3. REMOVE WINDSHIELD WIPER ARM AND BLADE ASSEMBLY LH (See page [WW-4](#))****4. REMOVE WINDSHIELD WIPER ARM AND BLADE ASSEMBLY RH (See page [WW-4](#))****5. REMOVE HOOD TO COWL TOP SEAL (See page [WW-4](#))****6. REMOVE COWL TOP VENTILATOR LOUVER LH (See page [WW-4](#))****7. REMOVE WINDSHIELD WIPER MOTOR AND LINK (See page [WW-5](#))****8. REMOVE OUTER COWL TOP PANEL SUB-ASSEMBLY**

(a) Remove the 7 bolts and outer cowl top panel.

9. REMOVE NO. 1 COWL WATER EXTRACT HOSE

(a) Remove the clip and No. 1 cowl water extract hose.

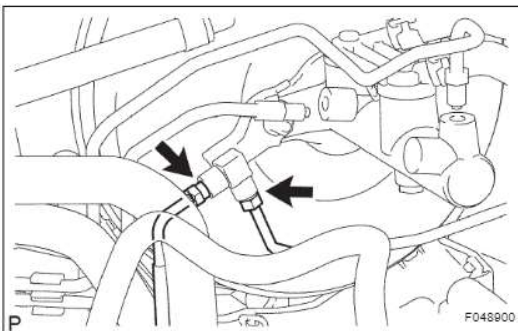
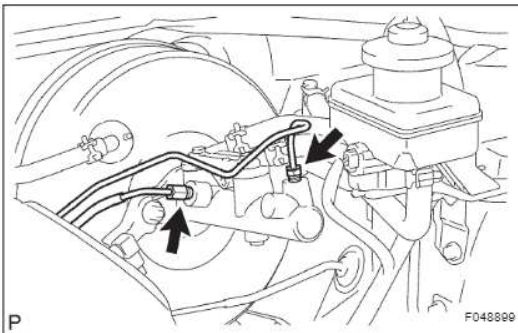
10. REMOVE LOWER COWL BODY MOUNTING BRACKET LH

(a) Remove a bolt and lower cowl body mounting bracket LH.

11. REMOVE AIR CLEANER CAP SUB-ASSEMBLY**12. REMOVE BRAKE MASTER CYLINDER SUB-ASSEMBLY**

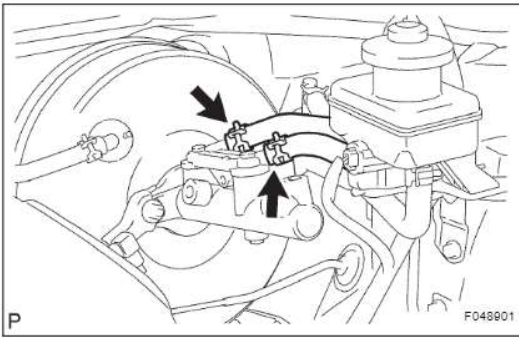
(a) Using SST, disconnect the 2 brake tubes from the master cylinder.

SST 09023-00101

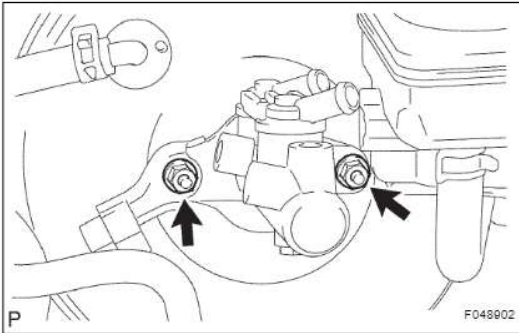


(b) Using SST, disconnect the 2 brake tubes from the No. 1 way.

SST 09023-00101

BRAKE – BRAKE MASTER CYLINDER**BR-13**

- (c) Remove the clips and disconnect the 2 reservoir tubes from the master cylinder.



- (d) Remove the 2 nuts, and pull out the master cylinder and No. 1 way.

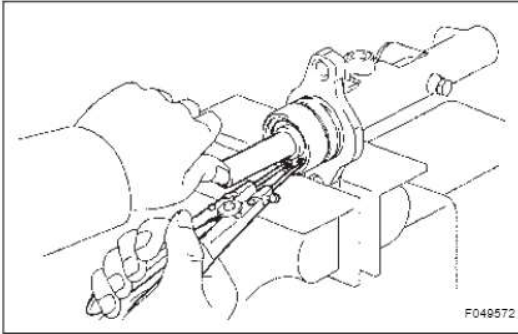
BR

BR-14

BRAKE – BRAKE MASTER CYLINDER

DISASSEMBLY**1. REMOVE UNION**

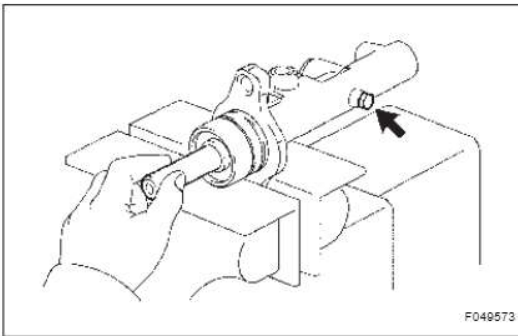
- (a) Remove the stopper screw and master cylinder union.
- (b) Remove the 2 grommets from the master cylinder.

**2. REMOVE BRAKE MASTER CYLINDER KIT**

- (a) Hold the master cylinder in a vise with the 2 aluminum plates in between.
- (b) Remove the O-ring from the master cylinder.
- (c) Push in the piston.
- (d) Using snap ring pliers, remove the snap ring.

NOTICE:

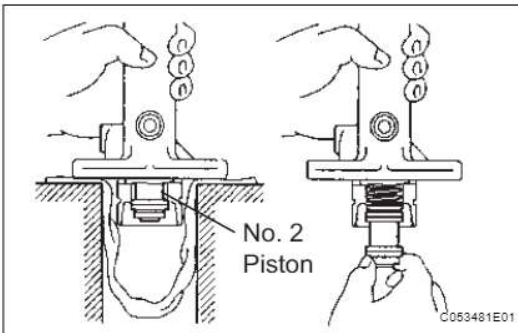
When pushing the piston, the fluid left in the cylinder may spatter.



- (e) Push in the piston and remove the piston stopper bolt and gasket.
- (f) Remove the No. 1 piston from the master cylinder body by pulling it straight out.

NOTICE:

Do not scratch the inside of the cylinder body.



- (g) Tap the flanged part against wooden blocks until the end of the No. 2 piston comes out. When the end of the No. 2 piston comes out, pull out the No. 2 piston straight from the master cylinder body.

NOTICE:

Do not scratch the inside of the cylinder body.

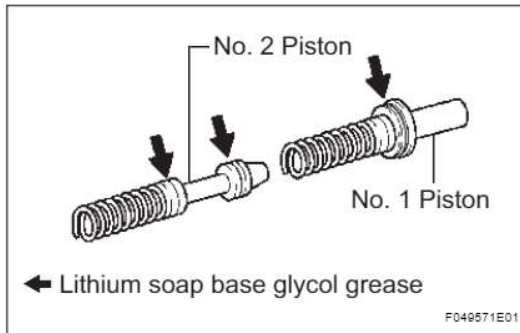
BRAKE – BRAKE MASTER CYLINDER

BR-15

REASSEMBLY

1. CHECK BRAKE MASTER CYLINDER SUB-ASSEMBLY

- (a) Check the inside of the master cylinder for scratch. If necessary, replace the master cylinder.



2. INSTALL BRAKE MASTER CYLINDER KIT

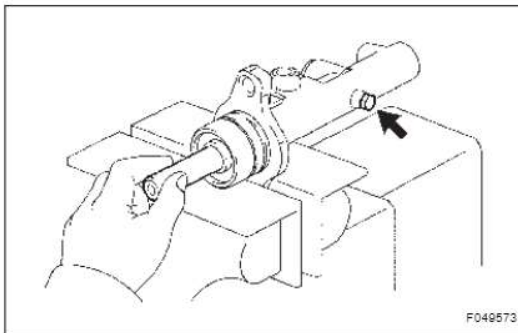
- (a) Place aluminum plates between the vise and master cylinder. Place the master cylinder in a vise.
 (b) Apply lithium soap base glycol grease to the rubber part as shown in the illustration.
 (c) Install the No. 1 and No. 2 pistons to the master cylinder body.

NOTICE:

- Install the pistons straight carefully not to give any damage to the inside of the cylinder.
- Do not damage the lip of the cylinder cup.

- (d) Push in the piston and install a new gasket and a new piston stopper bolt.

Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)

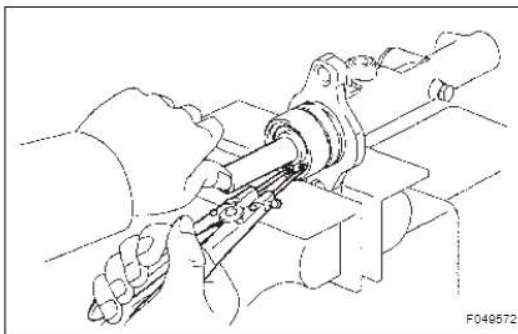


- (e) Using snap ring pliers, install the hole snap ring with the piston pushed in.

NOTICE:

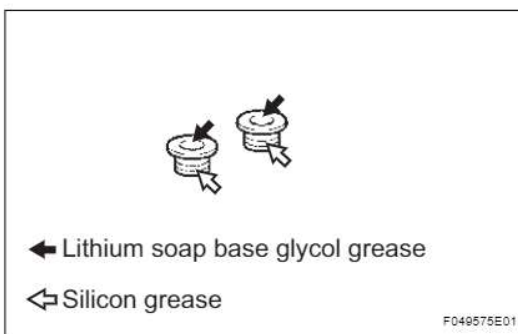
Do not scratch the inside of the cylinder body.

- (f) Apply lithium soap base glycol grease to a new O-ring.
 (g) Install the O-ring to the master cylinder body.



3. INSTALL UNION

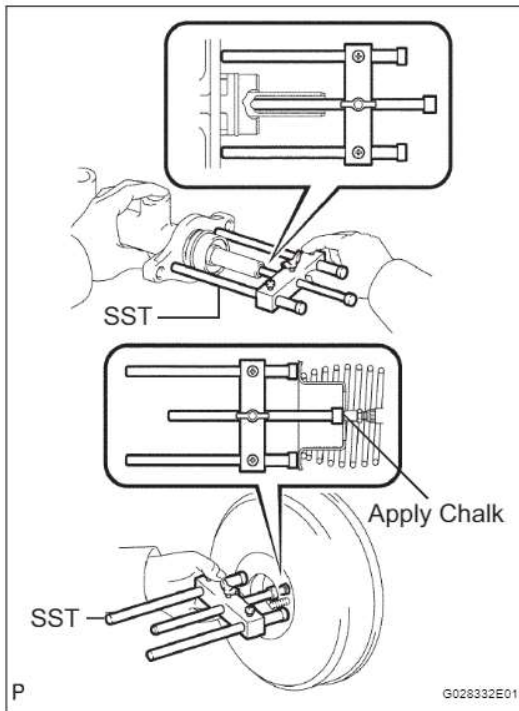
- (a) Apply lithium soap base glycol grease and silicon grease to the 2 grommets as shown in the illustration.
 (b) Install the 2 grommets to the master cylinder body.
 (c) Install the master cylinder union with the stopper screw.



BR

BR-16

BRAKE – BRAKE MASTER CYLINDER



4. CHECK AND ADJUST BRAKE BOOSTER PUSH ROD

- (a) Set SST on the master cylinder and lower the rod of the SST until it slightly touches the piston.

SST 09737-00013

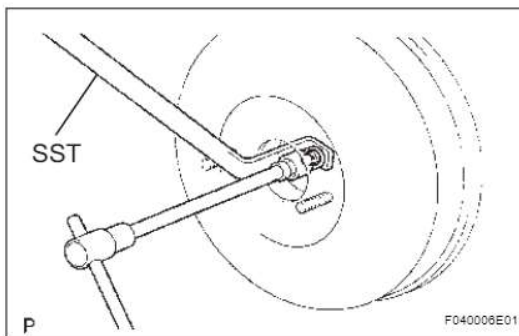
- (b) Apply chalk to the flat tip of the SST rod. Turn the SST upside down and measure the clearance between the brake booster push rod and the SST.

Clearance:

0 mm (0 in.)

If there is a clearance between the SST main body and the shell of the brake booster, the push rod is protruding too far.

If the chalk does not stick on the tip of the brake booster push rod, the push rod protrusion is insufficient.



- (c) If the clearance is not within the standard, adjust the length by holding the rod using SST and turning the tip of the rod using a 7 mm socket driver.

SST 09737-00020

HINT:

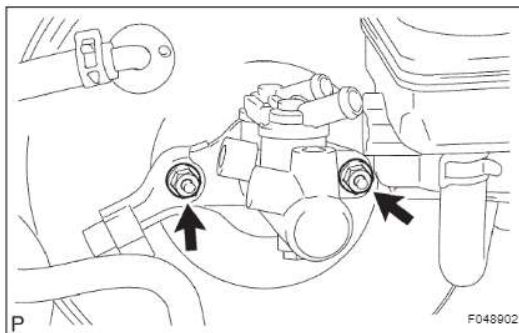
Check the push rod clearance again after adjustment.

INSTALLATION

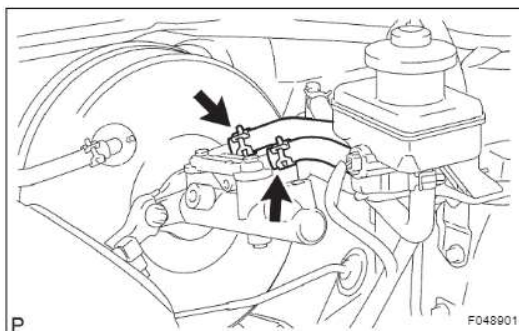
1. INSTALL BRAKE MASTER CYLINDER SUB-ASSEMBLY

- (a) Install the master cylinder and No. 1 way with the 2 nuts.

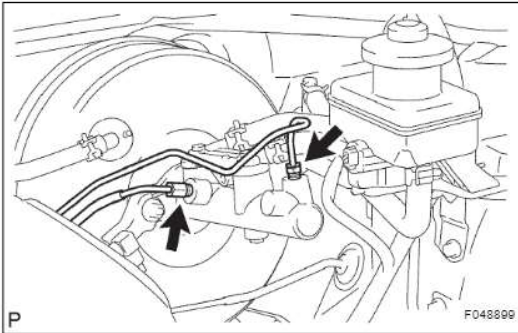
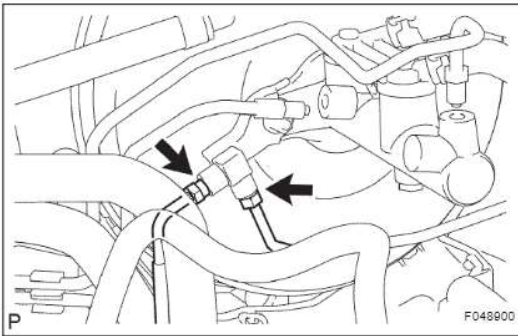
Torque: 12.5 N*m (127 kgf*cm, 9 ft.*lbf)



- (b) Connect the 2 reservoir tubes to the master cylinder with the clips.



BR

BRAKE – BRAKE MASTER CYLINDER**BR-17**

- (c) Using SST, connect the 2 brake tubes to the No. 1 way.
SST 09023-00101
Torque: 15 N*m (155 kgf*cm, 11 ft.*lbf) without SST
14 N*m (143 kgf*cm, 10 ft.*lbf) with SST
 Use a torque wrench with a fulcrum length of 30 cm (11.81 in.).
- (d) Using SST, connect the 2 brake tubes to the master cylinder.
SST 09023-00101
Torque: 15 N*m (155 kgf*cm, 11 ft.*lbf) without SST
14 N*m (143 kgf*cm, 10 ft.*lbf) with SST
 Use a torque wrench with a fulcrum length of 30 cm (11.81 in.).
2. **INSTALL AIR CLEANER CAP SUB-ASSEMBLY**
 3. **INSTALL LOWER COWL BODY MOUNTING BRACKET LH**
 - (a) Install the lower cowl top mounting bracket LH with a bolt.
Torque: 13 N*m (133 kgf*cm, 10 ft.*lbf)
 4. **INSTALL NO. 1 COWL WATER EXTRACT HOSE**
 - (a) Install the No. 1 cowl water extract hose with the clip.
 5. **INSTALL OUTER COWL TOP PANEL SUB-ASSEMBLY**
 - (a) Install the outer cowl top panel with the 7 bolts.
Torque: 13 N*m (133 kgf*cm, 10 ft.*lbf)
 6. **FILL RESERVOIR WITH BRAKE FLUID (See page [BR-3](#))**
 7. **BLEED AIR FROM BRAKE MASTER CYLINDER (See page [BR-3](#))**
 8. **BLEED AIR FROM BRAKE LINE (See page [BR-4](#))**
 9. **CHECK BRAKE FLUID LEVEL IN RESERVOIR (See page [BR-4](#))**
 10. **CHECK FOR BRAKE FLUID LEAKAGE**
 11. **INSTALL WINDSHIELD WIPER MOTOR AND LINK (See page [WW-7](#))**
 12. **INSTALL COWL TOP VENTILATOR LOUVER LH**
 13. **INSTALL HOOD TO COWL TOP SEAL**
 14. **INSTALL WINDSHIELD WIPER ARM AND BLADE ASSEMBLY LH (See page [WW-7](#))**
 15. **INSTALL WINDSHIELD WIPER ARM AND BLADE ASSEMBLY RH (See page [WW-8](#))**

BR

BR-18

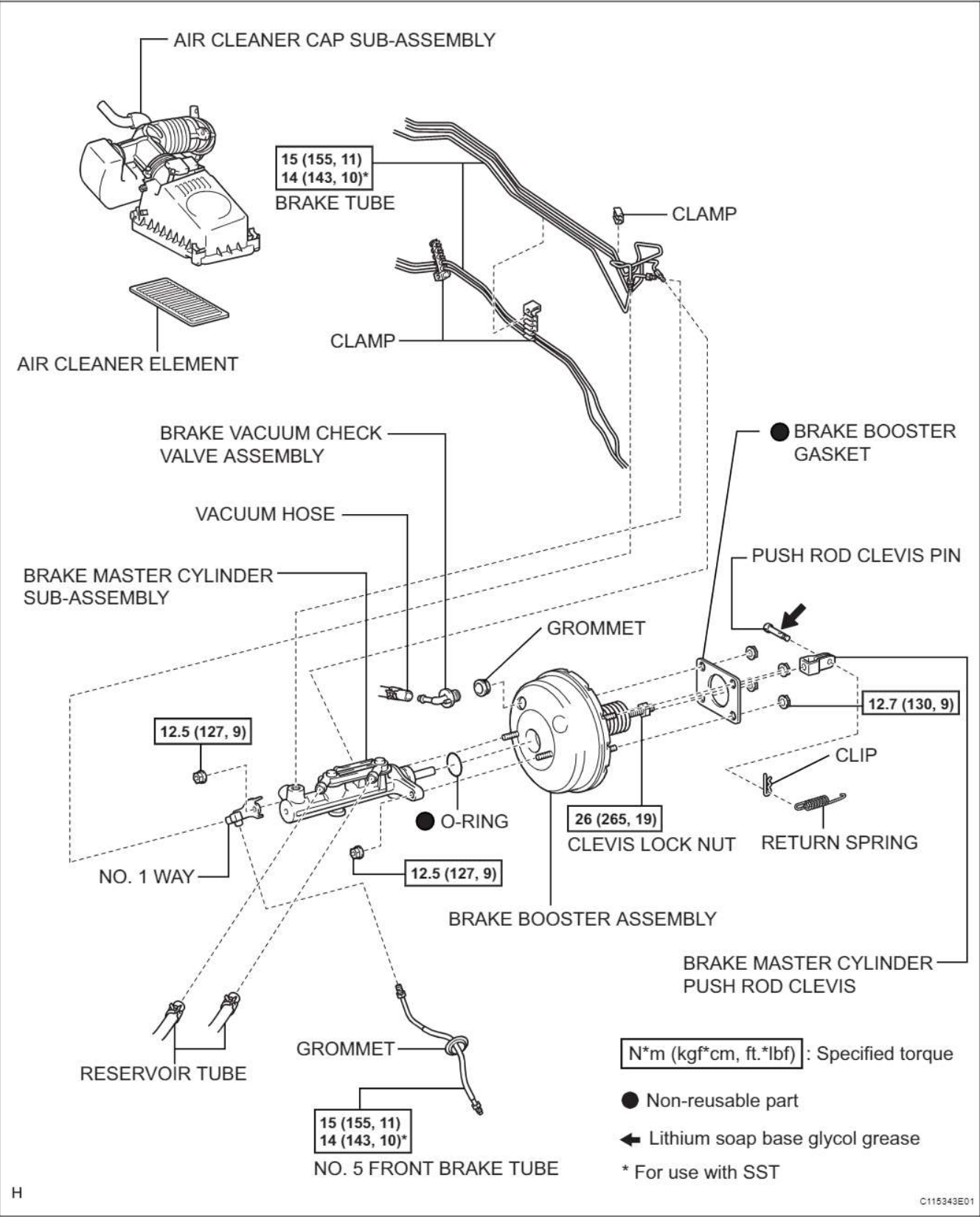
BRAKE – BRAKE MASTER CYLINDER

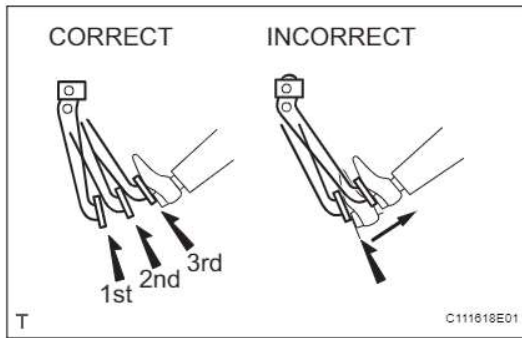
16. INSTALL FRONT WIPER ARM HEAD CAP

BR

BRAKE BOOSTER

COMPONENTS

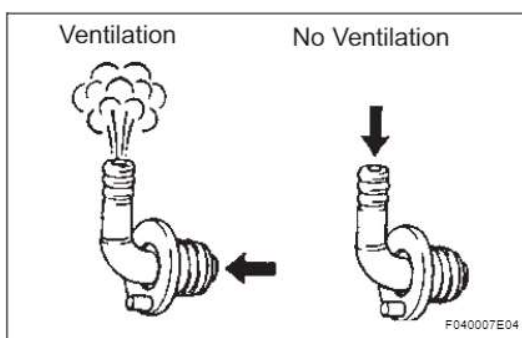
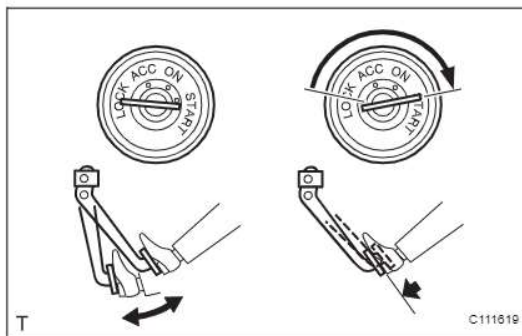


BRAKE – BRAKE BOOSTER**BR-19****ON-VEHICLE INSPECTION****1. CHECK BRAKE BOOSTER ASSEMBLY****(a) Airtightness check.**

- (1) Start the engine and stop it after 1 or 2 minutes. Depress the brake pedal several times.
- (2) Make sure the booster is airtight. Check that the distance the pedal can be depressed decreases gradually in correlation with each subsequent press of the pedal.
If the pedal is not as specified, check the check valve.
If the check valve is normal, replace the booster.
- (3) Start the engine. Depress and hold down the pedal, and stop the engine.
- (4) Make sure the booster is airtight. Hold the pedal for 30 seconds and check that there is no change in the pedal reserve distance.
If the pedal is not as specified, check the check valve.
If the check valve is normal, replace the booster.

(b) Operation check.

- (1) Depress the pedal several times with the ignition switch OFF and check that there is no change in the pedal reserve distance.
- (2) Depress and hold down the pedal, and start the engine. Check that the pedal can only be depressed slightly.
If the pedal is not as specified, check the check valve.
If the check valve is normal, replace the booster.

**2. CHECK BRAKE VACUUM CHECK VALVE ASSEMBLY****(a) Check the check valve.**

- (1) Slide the clip and disconnect the vacuum hose.
- (2) Remove the check valve from the booster.
- (3) Check that there is ventilation from the booster to the engine, and no ventilation from the engine to the booster.
If the results are not as specified, replace the check valve.

BR

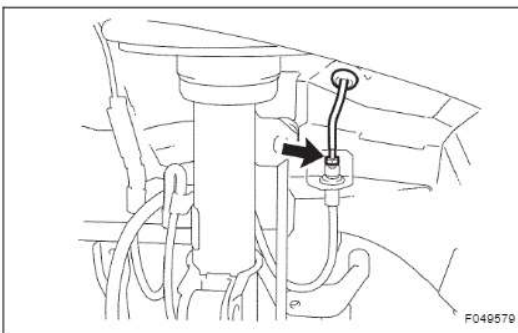
BR-20**BRAKE – BRAKE BOOSTER****REMOVAL****1. DRAIN BRAKE FLUID****NOTICE:**

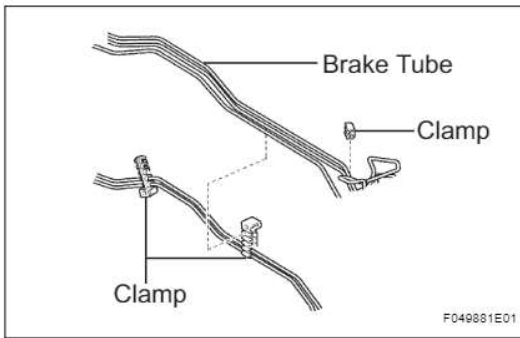
Wash off brake fluid immediately if it comes in contact with any painted surface.

2. REMOVE FRONT WIPER ARM HEAD CAP (See page [WW-4](#))**3. REMOVE WINDSHIELD WIPER ARM AND BLADE ASSEMBLY LH (See page [WW-4](#))****4. REMOVE WINDSHIELD WIPER ARM AND BLADE ASSEMBLY RH (See page [WW-4](#))****5. REMOVE HOOD TO COWL TOP SEAL (See page [WW-4](#))****6. REMOVE COWL TOP VENTILATOR LOUVER LH (See page [WW-4](#))****7. REMOVE WINDSHIELD WIPER MOTOR AND LINK (See page [WW-5](#))****8. REMOVE OUTER COW TOP PANEL SUB-ASSEMBLY (See page [BR-12](#))****9. REMOVE NO. 1 COWL WATER EXTRACT HOSE (See page [BR-12](#))****10. REMOVE LOWER COWL BODY MOUNTING BRACKET LH (See page [BR-12](#))****11. REMOVE AIR CLEANER CAP SUB-ASSEMBLY****12. REMOVE BRAKE MASTER CYLINDER SUB-ASSEMBLY (See page [BR-12](#))****13. DISCONNECT BRAKE MASTER CYLINDER PUSH ROD CLEVIS (See page [BR-6](#))****14. REMOVE FRONT WHEEL LH****15. REMOVE NO. 5 FRONT BRAKE TUBE**

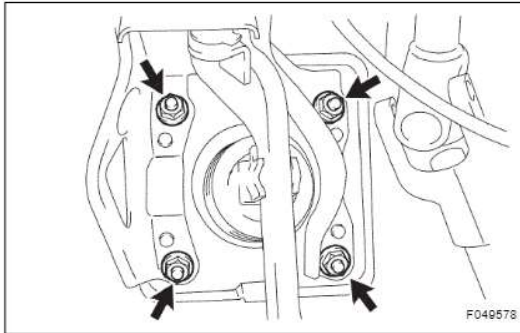
- (a) Using SST, disconnect the No. 5 front brake tube and remove it.

SST 09023-00101

**BR**

BRAKE – BRAKE BOOSTER**BR-21****16. REMOVE BRAKE TUBE**

- (a) Remove the 3 brake tubes from the clamps as shown in the illustration.
- (b) Remove the clamp from the brake tubes.

**17. REMOVE BRAKE BOOSTER ASSEMBLY**

- (a) Loosen the clevis lock nut and remove the clevis from the brake booster.
- (b) Slide the clip and disconnect the vacuum hose from the brake booster.
- (c) Remove the 4 nuts and brake booster.
- (d) Remove the check valve and grommet from the brake booster.

18. REMOVE BRAKE BOOSTER GASKET**BR**

BR-22

BRAKE – BRAKE BOOSTER

INSTALLATION

1. INSTALL BRAKE BOOSTER GASKET

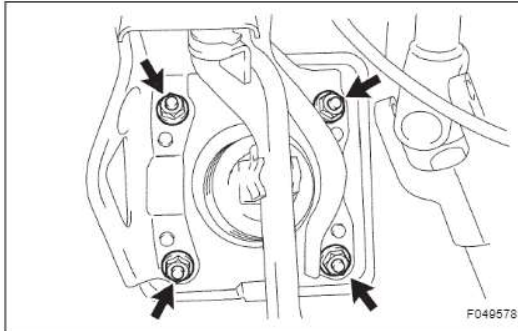
- (a) Install a new gasket to the brake booster.

2. INSTALL BRAKE BOOSTER ASSEMBLY

- (a) Install the grommet and check valve to the brake booster.
 (b) Install the brake booster with the 4 nuts.
Torque: 12.7 N*m (130 kgf*cm, 9 ft.*lbf)
 (c) Connect the vacuum hose to the brake booster with the clamp.
 (d) Install the push rod clevis and lock nut to the brake booster.

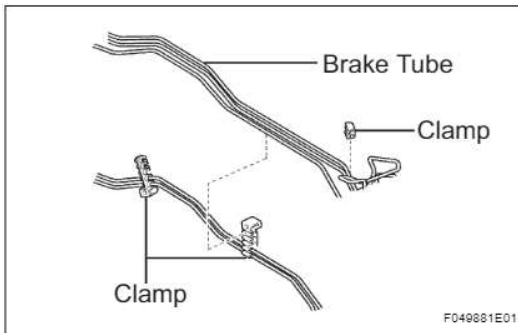
HINT:

After adjusting the brake pedal height, torque the clevis lock nut.



3. INSTALL BRAKE TUBE

- (a) Install the 3 brake tubes to the clamps as shown in the illustration.
 (b) Install the clamp to the brake tubes.



4. CONNECT NO. 5 FRONT BRAKE TUBE

- (a) Using SST, connect the No. 5 front brake tube.

SST 09023-00101

Torque: 15 N*m (155 kgf*cm, 11 ft.*lbf) without SST

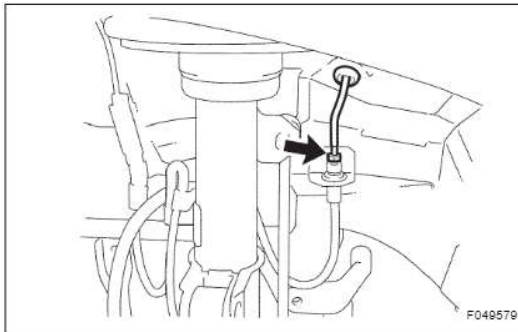
14 N*m (143 kgf*cm, 10 ft.*lbf) with SST

HINT:

Use a torque wrench with a fulcrum length of 30 cm (11.81 in.).

NOTICE:

Make sure that the grommet is installed correctly.



5. INSTALL FRONT WHEEL LH

Torque: 103 N*m (1,050 kgf*cm, 76 ft.*lbf)

6. INSTALL BRAKE MASTER CYLINDER SUB-ASSEMBLY (See page BR-15)

7. INSTALL AIR CLEANER CAP SUB-ASSEMBLY

8. INSTALL LOWER COWL BODY MOUNTING BRACKET LH (See page BR-16)

9. INSTALL NO. 1 COWL WATER EXTRACT HOSE (See page BR-16)

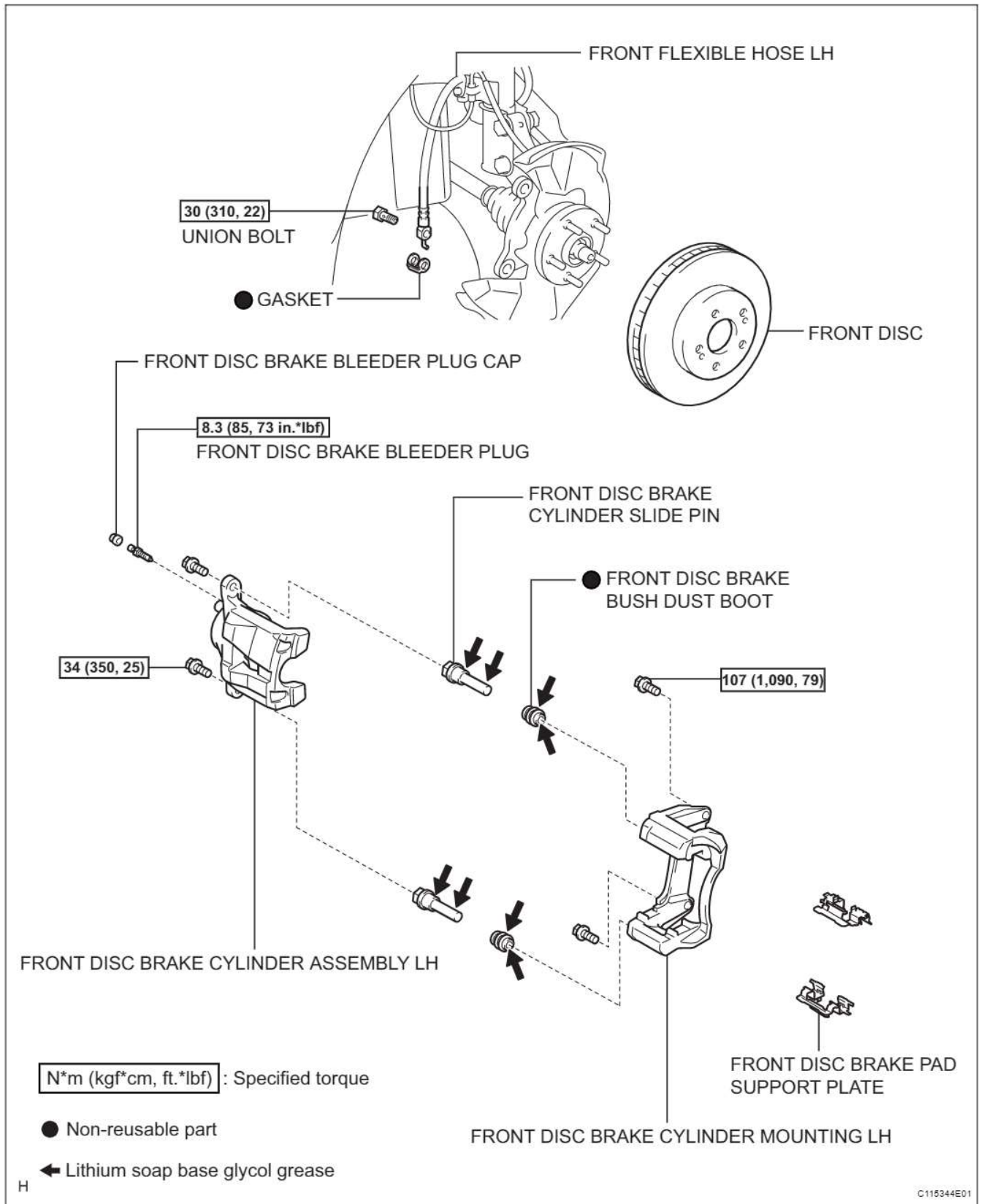
10. INSTALL OUTER COWL TOP PANEL SUB-ASSEMBLY (See page BR-16)

BRAKE – BRAKE BOOSTER**BR-23**

11. CONNECT BRAKE MASTER CYLINDER PUSH ROD CLEVIS (See page [BR-9](#))
12. FILL RESERVOIR WITH BRAKE FLUID (See page [BR-3](#))
13. BLEED AIR FROM BRAKE MASTER CYLINDER (See page [BR-3](#))
14. BLEED AIR FROM BRAKE LINE (See page [BR-4](#))
15. CHECK AND ADJUST BRAKE PEDAL HEIGHT (See page [BR-7](#))
16. CHECK BRAKE PEDAL FREE PLAY (See page [BR-7](#))
17. CHECK BRAKE PEDAL RESERVE DISTANCE (See page [BR-8](#))
18. CHECK BRAKE FLUID LEVEL IN RESERVOIR (See page [BR-4](#))
19. CHECK FOR BRAKE FLUID LEAKAGE
20. INSTALL WINDSHIELD WIPER MOTOR AND LINK (See page [WW-7](#))
21. INSTALL COWL TOP VENTILATOR LOUVER LH
22. INSTALL HOOD TO COWL TOP SEAL
23. INSTALL WINDSHIELD WIPER ARM AND BLADE ASSEMBLY LH (See page [WW-7](#))
24. INSTALL WINDSHIELD WIPER ARM AND BLADE ASSEMBLY RH (See page [WW-8](#))
25. INSTALL FRONT WIPER ARM HEAD CAP
26. CHECK BRAKE BOOSTER ASSEMBLY (See page [BR-19](#))

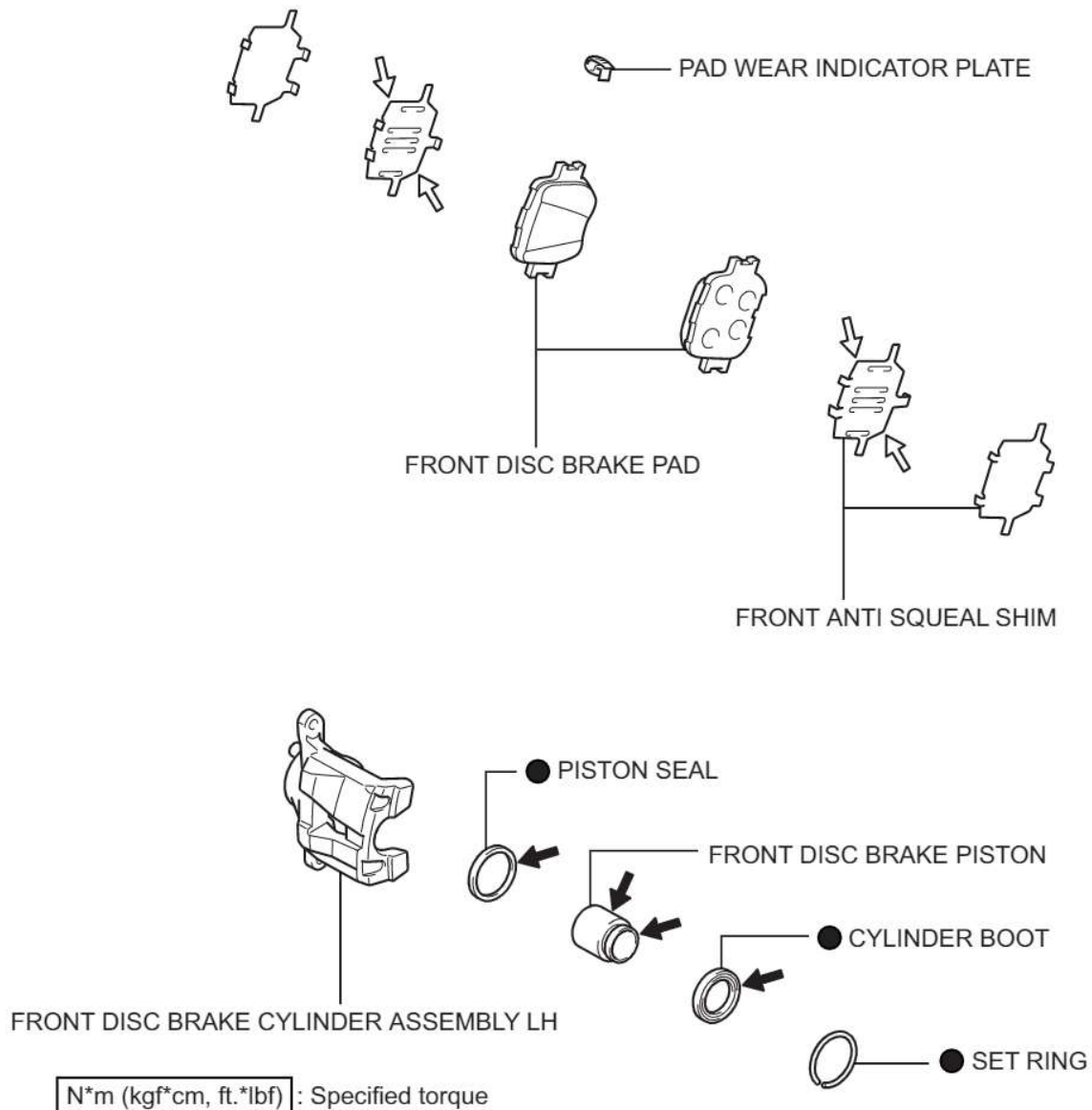
BR

FRONT BRAKE COMPONENTS



BR-24

BRAKE – FRONT BRAKE



N*m (kgf*cm, ft.*lbf) : Specified torque

- Non-reusable part

← Lithium soap base glycol grease

⬅ Disc brake grease

H

C115345E01

BRAKE – FRONT BRAKE**BR-25****REMOVAL****HINT:**

- Use the same procedures for the LH side and RH side.
- The procedures listed below are for the LH side.

1. REMOVE FRONT WHEEL LH**2. DRAIN BRAKE FLUID****NOTICE:**

Wash off brake fluid immediately if it comes in contact with any painted surface.

3. REMOVE FRONT DISC BRAKE CYLINDER ASSEMBLY LH

- Remove the union bolt and gasket.
- Disconnect the flexible hose from the brake cylinder.
- Remove the 2 bolt and brake cylinder.

4. REMOVE FRONT DISC BRAKE PAD

- Remove the 2 pads with anti squeal shims from the cylinder mounting.

5. REMOVE FRONT ANTI SQUEAL SHIM

- Remove the 4 anti squeal shims from each pad.
- Remove the pad wear indicator plate from the pad (inner).

6. REMOVE FRONT DISC BRAKE PAD SUPPORT PLATE

- Remove the support plates (No. 1 and No. 2) from the cylinder mounting.

7. REMOVE FRONT DISC BRAKE CYLINDER SLIDE PIN

- Remove the 2 slide pins from the cylinder mounting.

8. REMOVE FRONT DISC BRAKE BUSH DUST BOOT

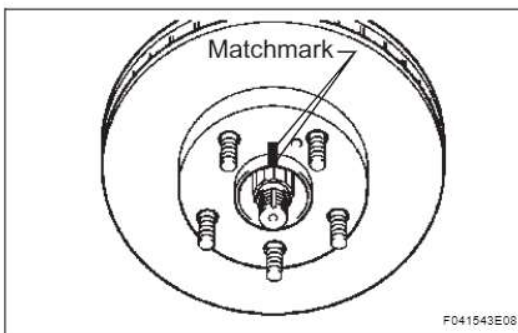
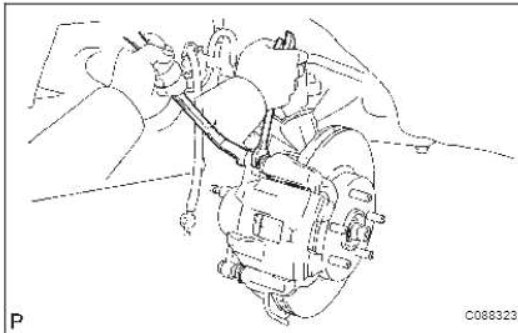
- Remove the 2 dust boots from the cylinder mounting.

9. REMOVE FRONT DISC BRAKE CYLINDER MOUNTING LH

- Remove the 2 bolts and cylinder mounting.

10. REMOVE FRONT DISC

- Put matchmarks on the disc and axle hub.
- Remove the front disc.

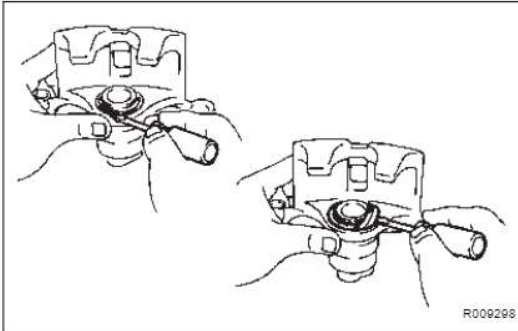
**BR**

BR-26

BRAKE – FRONT BRAKE

DISASSEMBLY**HINT:**

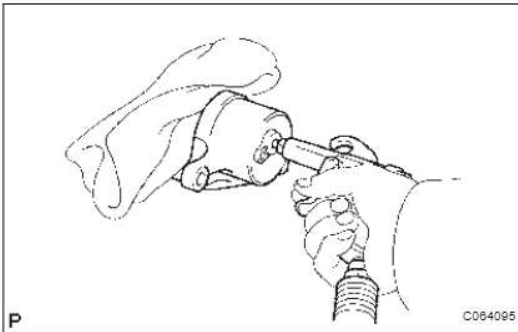
- Use the same procedures for the LH side and RH side.
- The procedures listed below are for the LH side.

**1. REMOVE CYLINDER BOOT**

- (a) Using a screwdriver, pry out the set ring and cylinder boot.

NOTICE:

Be careful not to damage the brake piston and cylinder.

**2. REMOVE FRONT DISC BRAKE PISTON**

- (a) Place a piece of cloth or equivalent between the piston and brake cylinder.
- (b) Use compressed air to remove the piston from the brake cylinder.

CAUTION:

Do not place your finger in front of the piston when using compressed air.

NOTICE:

Be careful not to spatter the brake fluid.

3. REMOVE PISTON SEAL

- (a) Using a screwdriver, pry out the seal from the brake cylinder.

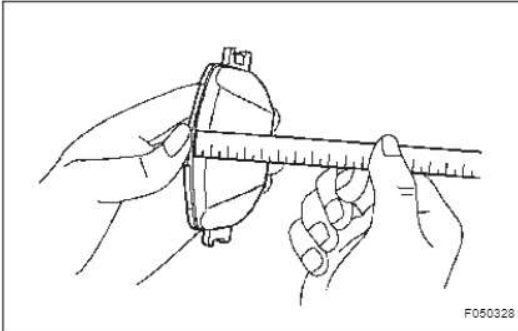
NOTICE:

Be careful not to damage the inner cylinder and cylinder groove.

4. REMOVE FRONT DISC BRAKE BLEEDER PLUG

BRAKE – FRONT BRAKE**BR-27****INSPECTION****1. CHECK BRAKE CYLINDER AND PISTON**

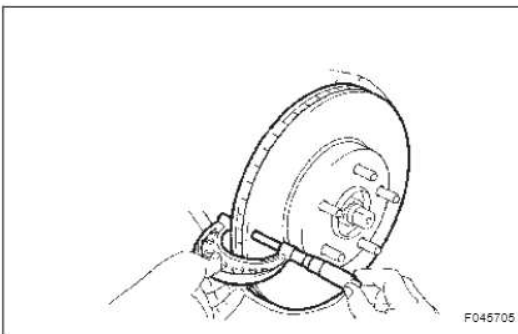
- (a) Check the brake cylinder bore and piston for rust or scoring.
If necessary, replace the brake cylinder and piston.

**2. CHECK PAD LINING THICKNESS**

- (a) Using a ruler, measure the pad lining thickness.
Standard thickness:
11.5 mm (0.453 in.)
Minimum thickness:
1.0 mm (0.039 in.)
If the pad lining thickness is equal to or less than the minimum, replace the brake pad.

3. CHECK FRONT DISC BRAKE PAD SUPPORT PLATE

- (a) Check the 4 support plates.
Make sure that the plates have sufficient rebound and are free from deformation, cracks, wear, rust and dirt.
If necessary, replace the support plates.

**4. CHECK DISC THICKNESS**

- (a) Using a micrometer, measure the disc thickness.
Standard thickness:
25.0 mm (0.984 in.)
Minimum thickness:
23.0 mm (0.906 in.)
If the disc thickness is less than the minimum, replace the disc.

BR

BR-28

BRAKE – FRONT BRAKE

REASSEMBLY

HINT:

- Use the same procedures for the LH side and RH side.
- The procedures listed below are for the LH side.

1. TEMPORARILY TIGHTEN FRONT DISC BRAKE BLEEDER PLUG

- (a) Install the bleeder plug to the brake cylinder.

HINT:

The bleeder plug will be tightened to a torque specification in the "bleed air from brake line" procedures.

- (b) Install the cap.

2. INSTALL PISTON SEAL

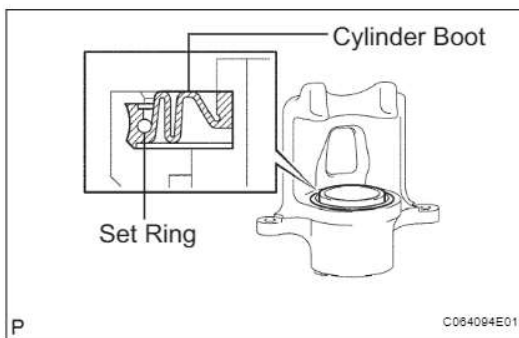
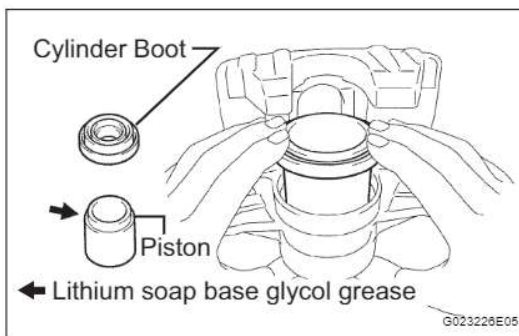
- (a) Apply lithium soap base glycol grease to a new piston seal.
- (b) Install the piston seal to the brake cylinder.

3. INSTALL FRONT DISC BRAKE PISTON

- (a) Apply lithium soap base glycol grease to the piston and a new cylinder boot.
- (b) Install the cylinder boot to the piston.
- (c) Install the piston (with cylinder boot) to the brake cylinder.

NOTICE:

Do not forcibly install the piston to the brake cylinder.



4. INSTALL CYLINDER BOOT

- (a) Install the cylinder boot to the brake cylinder.

NOTICE:

Install the cylinder boot securely to the grooves of the brake cylinder and piston.

- (b) Using a screwdriver, install the set ring.

NOTICE:

Be careful not to damage the cylinder boot.

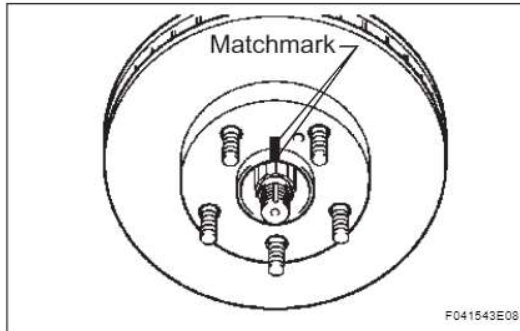
BRAKE – FRONT BRAKE

BR-29

INSTALLATION

HINT:

- Use the same procedures for the LH side and RH side.
- The procedures listed below are for the LH side.

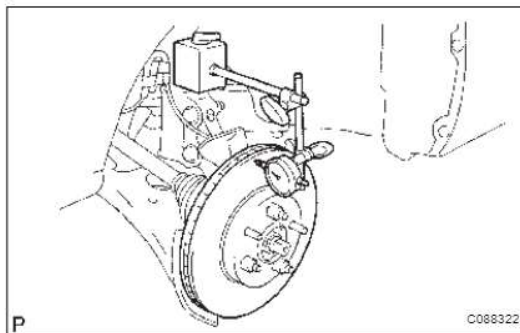


1. INSTALL FRONT DISC

- (a) Align the matchmarks and install the disc.

HINT:

When replacing the disc with a new one, select the installation position where the disc has the minimum runout.



2. CHECK DISC RUNOUT

- (a) Check the bearing play in the axle direction and check the axle hub runout (see page AH-6).
- (b) Temporarily install the disc to the hub with the 2 hub nuts.
- (c) Using a dial indicator, measure the disc runout 10 mm (0.3 in.) away from the outer edge of the disc.

Minimum disc runout:

0.05 mm (0.0020 in.)

If the runout is greater than the maximum, change the installation position of the disc and axle so that the runout will become minimal.

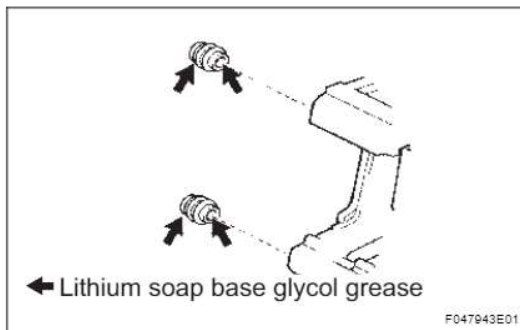
If the runout is greater than the maximum even when the installation positions are changed, grind the disc.

If the disc thickness is less than the minimum, replace the disc.

- (d) Remove the 2 hub nuts.

3. INSTALL FRONT DISC BRAKE CYLINDER MOUNTING LH

- (a) Install the cylinder mounting with the 2 bolts.
Torque: 107 N*m (1,090 kgf*cm, 79 ft.*lbf)



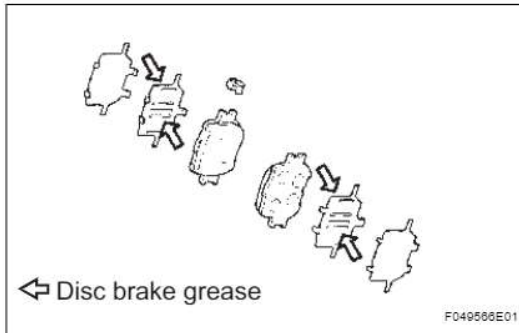
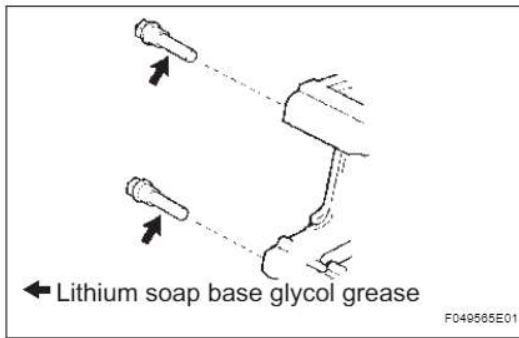
4. INSTALL FRONT DISC BRAKE BUSH DUST BOOT

- (a) Apply lithium soap base glycol grease to the seal surface of 2 new dust boots.
- (b) Install the dust boots to the cylinder mounting.

BR

BR-30

BRAKE – FRONT BRAKE



5. **INSTALL FRONT DISC BRAKE CYLINDER SLIDE PIN**
 - (a) Apply lithium soap base glycol grease to the sliding part and the seal surface of the 2 cylinder slide pins.
 - (b) Install the 2 cylinder slide pins to the cylinder mounting.
6. **INSTALL FRONT DISC BRAKE PAD SUPPORT PLATE**
 - (a) Install the support plate (No. 1 and No. 2) to the cylinder mounting.
7. **INSTALL FRONT ANTI SQUEAL SHIM**
 - (a) Apply disc brake grease to the both side of the shims (inner).
 - (b) Install the shims (inner and outer) to each pad.

NOTICE:

 - When replacing worn pads, the shims must be replaced together with the pads.
 - Install the shims in the correct positions and direction.
 - (c) Install the pad wear indicator plate to the pad (inner).

NOTICE:

Install the pad wear indicator plate in the correct position and direction.
8. **INSTALL FRONT DISC BRAKE PAD**
 - (a) Install the 2 pads to the cylinder mounting.

NOTICE:

There should be no oil or grease on the friction surface of the pads and disc.
9. **INSTALL FRONT DISC BRAE CYLINDER ASSEMBLY LH**
 - (a) Install the brake cylinder with the 2 bolts.

Torque: 34 N*m (350 kgf*cm, 25 ft.*lbf)
 - (b) Connect the flexible hose with the union bolt and a new gasket.

Torque: 30 N*m (310 kgf*cm, 22 ft.*lbf)

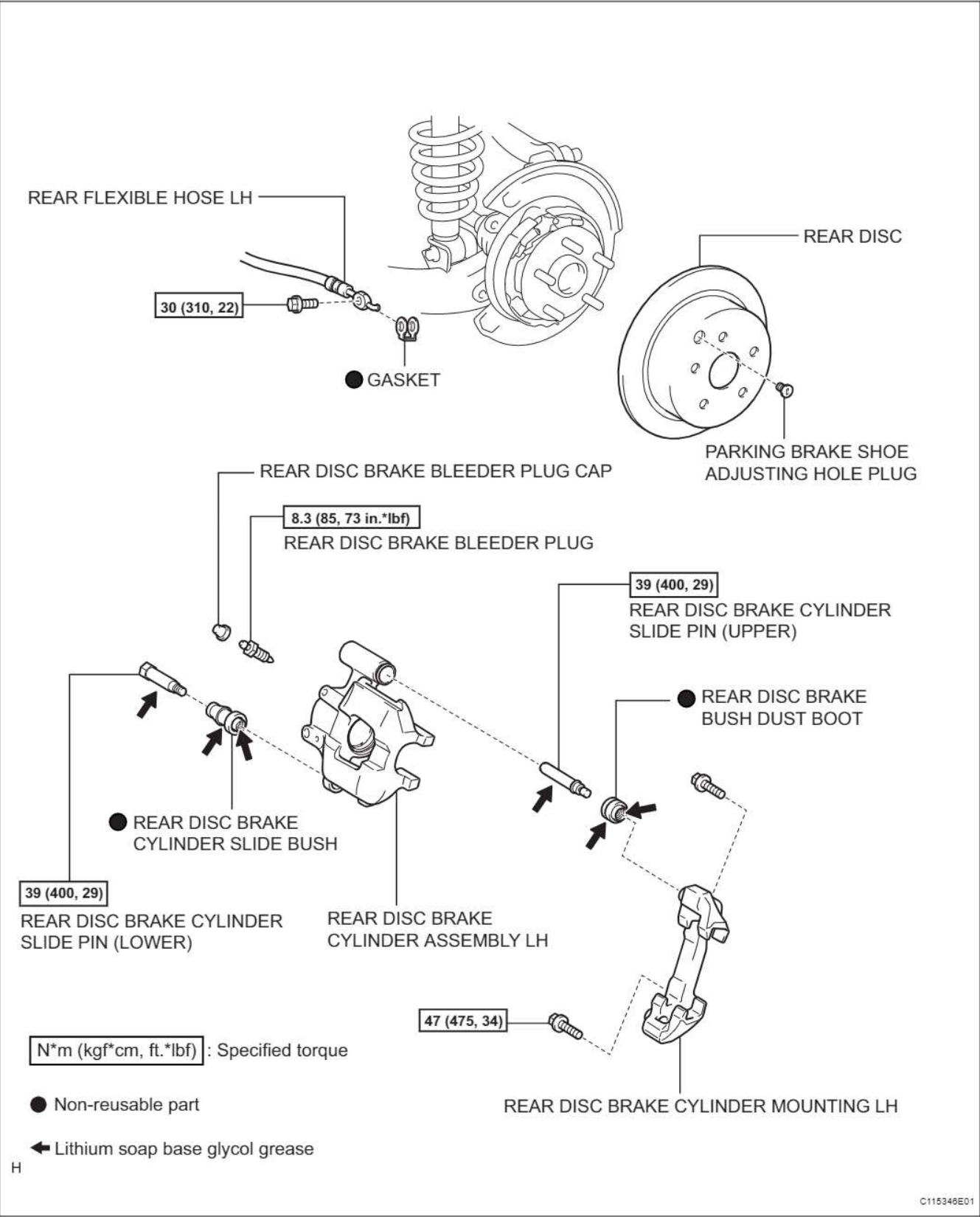
NOTICE:

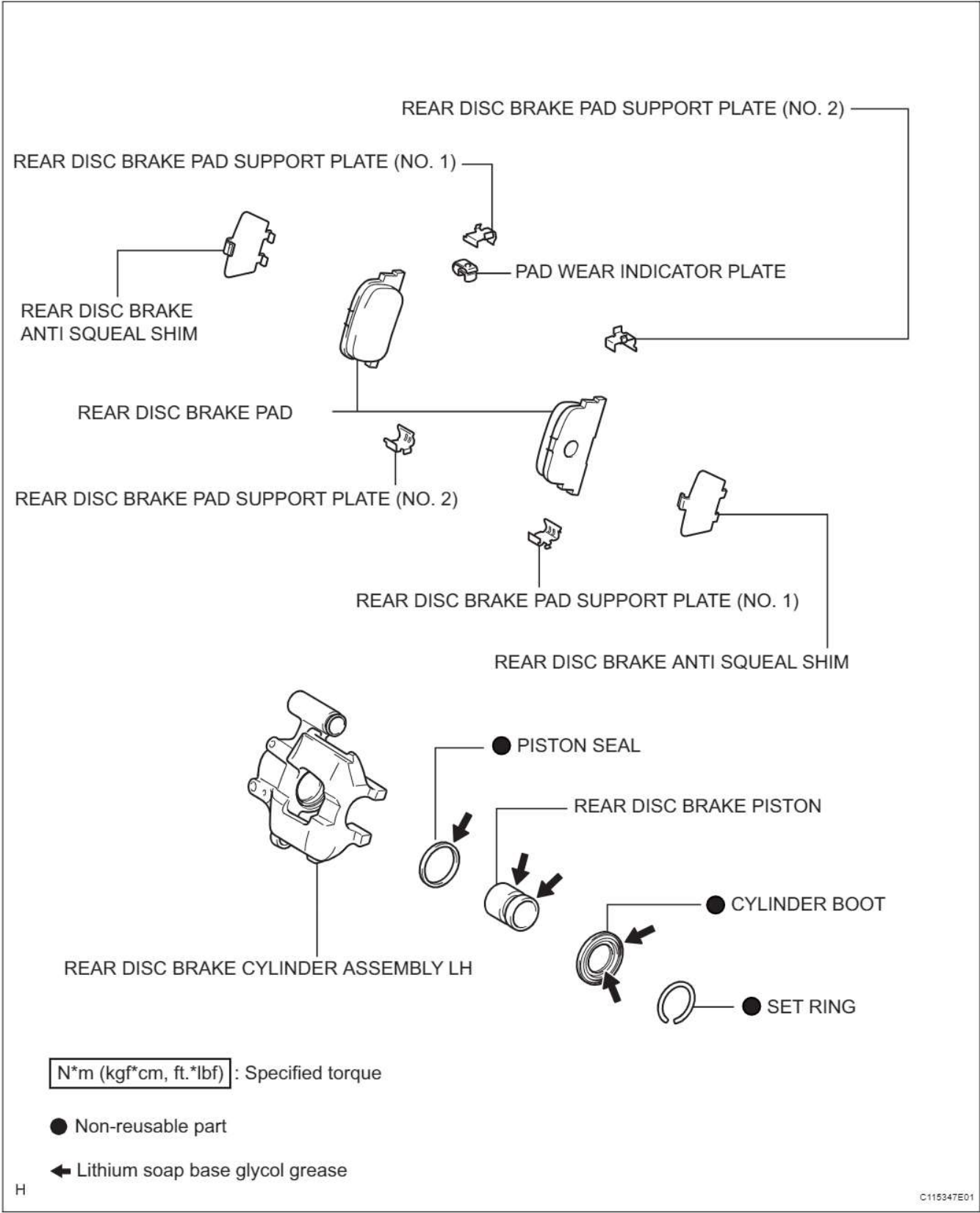
Connect the flexible hose lock securely in the lock hole in the brake cylinder.
10. **FILL RESERVOIR WITH BRAKE FLUID (See page BR-3)**
11. **BLEED AIR FROM BRAKE MASTER CYLINDER (See page BR-3)**
12. **BLEED AIR FROM BRAKE LINE (See page BR-4)**
13. **CHECK BRAKE FLUID LEVEL IN RESERVOIR (See page BR-4)**
14. **CHECK FOR BRAKE FLUID LEAKAGE**
15. **INSTALL FRONT WHEEL LH**

Torque: 103 N*m (1,050 kgf*cm, 76 ft.*lbf)

REAR BRAKE

COMPONENTS





BR-32**BRAKE – REAR BRAKE****REMOVAL****HINT:**

- Use the same procedures for the LH side and RH side.
- The procedures listed below are for the LH side.

1. REMOVE REAR WHEEL**2. DRAIN BRAKE FLUID****NOTICE:**

Wash off brake fluid immediately if it comes in contact with any painted surface.

3. DISCONNECT REAR FLEXIBLE HOSE LH

- Remove the union bolt and gasket.
- Disconnect the flexible hose from the brake cylinder.

4. REMOVE REAR DISC BRAKE CYLINDER SLIDE PIN

- Remove the cylinder slide pin (lower).

5. REMOVE REAR DISC BRAKE CYLINDER ASSEMBLY LH**6. REMOVE REAR DISC BRAKE PAD**

- Remove the 2 brake pads with anti squeal shims.

7. REMOVE REAR DISC BRAKE ANTI SQUEAL SHIM

- Remove the 2 shims from each pad.
- Using a screwdriver, remove the pad wear indicator plate from pad (inner).

8. REMOVE REAR DISC BRAKE PAD SUPPORT PLATE

- Remove the 4 support plates (No. 1 and No. 2) from the cylinder mounting.

9. REMOVE REAR DISC BRAKE BUSH DUST BOOT

- Remove the dust boot from the cylinder slide pin (upper).

10. REMOVE REAR DISC BRAKE CYLINDER SLIDE BUSH

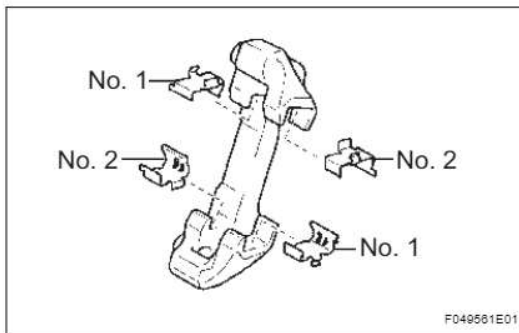
- Remove the cylinder slide bush from the brake cylinder.

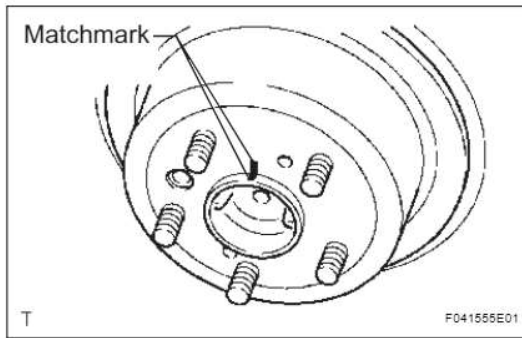
11. REMOVE REAR DISC BRAKE CYLINDER SLIDE PIN

- Using a 8 mm socket hexagon wrench, remove the cylinder slide pin (upper).

12. REMOVE REAR DISC BRAKE CYLINDER MOUNTING LH

- Remove the 2 bolts and cylinder mounting.



BRAKE – REAR BRAKE**BR-33****13. REMOVE REAR DISC**

- (a) Put matchmarks on the disc and axle hub.
- (b) Remove the rear disc.

14. REMOVE PARKING BRAKE SHOE ADJUSTING HOLE PLUG**BR**

BR-34

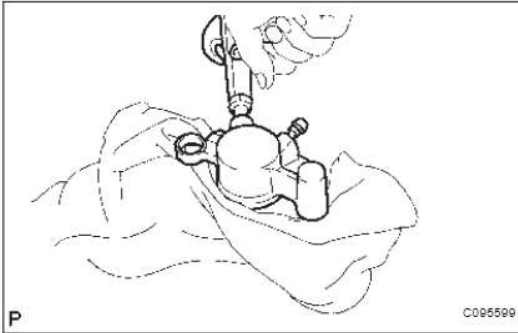
BRAKE – REAR BRAKE

DISASSEMBLY**HINT:**

- Use the same procedures for the LH side and RH side.
- The procedures listed below are for the LH side.

1. REMOVE CYLINDER BOOT

- (a) Using a screwdriver, pry out the set ring and cylinder boot.

**2. REMOVE REAR DISC BRAKE PISTON**

- (a) Place a cloth or equivalent between the piston and brake cylinder.
- (b) Use compressed air to remove the piston from the brake cylinder.

CAUTION:

Do not place your fingers in front of the piston when using compressed air.

NOTICE:

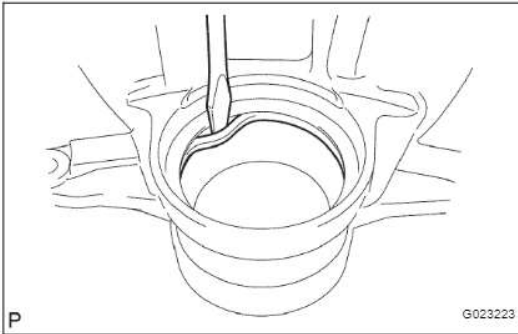
Be careful not to spatter the brake fluid.

3. REMOVE PISTON SEAL

- (a) Using a screwdriver, pry out the piston seal from the brake cylinder.

NOTICE:

Be careful not to damage the inner cylinder and cylinder groove.

4. REMOVE REAR DISC BRAKE BLEEDER PLUG

BRAKE – REAR BRAKE**BR-35****INSPECTION****1. CHECK BRAKE CYLINDER AND PISTON**

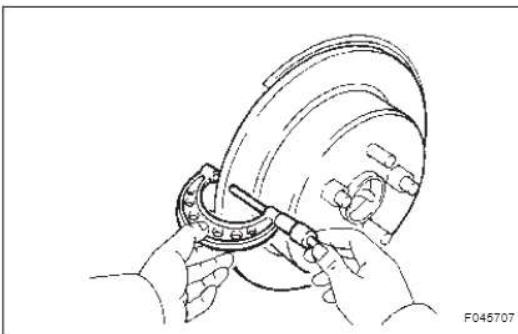
- (a) Check the brake cylinder bore and piston for rust or scoring.
If necessary, replace the brake cylinder and piston.

**2. CHECK PAD LINING THICKNESS**

- (a) Using a ruler, measure the pad lining thickness.
Standard thickness:
10.0 mm (0.394 in.)
Minimum thickness:
1.0 mm (0.039 in.)
If the pad lining thickness is equal to or less than the minimum, replace the pad.

3. CHECK REAR DISC BRAKE PAD SUPPORT PLATE

- (a) Check the 4 support plates.
Make sure that the plates have sufficient rebound and are free from deformation, cracks, wear, rust and dirt.
If necessary, replace the support plates.

**4. CHECK DISC THICKNESS**

- (a) Using a micrometer, measure the disc thickness.
Standard thickness:
9.0 mm (0.354 in.)
Minimum thickness:
7.5 mm (0.295 in.)
If the disc thickness is less than the minimum, replace the disc.

BR

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BRAKE – REAR BRAKE

REASSEMBLY

HINT:

- Use the same procedures for the LH side and RH side.
- The procedures listed below are for the LH side.

1. TEMPORARILY TIGHTEN REAR DISC BRAKE BLEEDER PLUG

- (a) Install the bleeder plug to the brake cylinder.

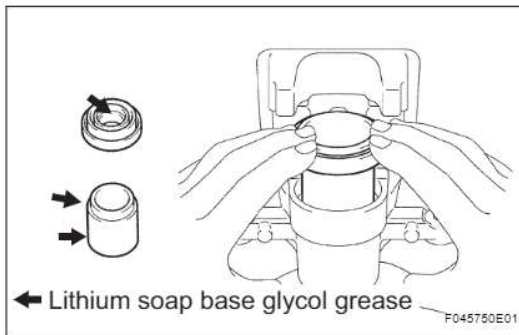
HINT:

The bleeder plug will be tightened to a torque specification in the "bleed air from brake line" procedures.

- (b) Install the cap.

2. INSTALL PISTON SEAL

- (a) Apply lithium soap base glycol grease to a new piston seal.
- (b) Install the piston seal to the brake cylinder.



3. INSTALL REAR DISC BRAKE PISTON

- (a) Apply lithium soap base glycol grease to the piston and a new cylinder boot.
- (b) Install the cylinder boot to the piston.
- (c) Install the piston (with cylinder boot) to the brake cylinder.

NOTICE:

Do not forcibly install the piston to the brake cylinder.

4. INSTALL CYLINDER BOOT

- (a) Install the cylinder boot to the brake cylinder.

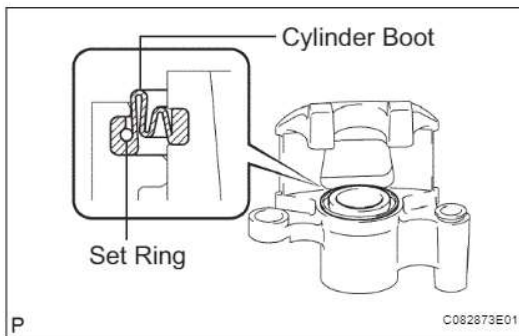
NOTICE:

Install the boot securely to the grooves of the brake cylinder and piston.

- (b) Using a screwdriver, install the set ring.

NOTICE:

Be careful not to damage the cylinder boot.



BRAKE – REAR BRAKE

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INSTALLATION

HINT:

- Use the same procedures for the LH side and RH side.
- The procedures listed below are for the LH side.

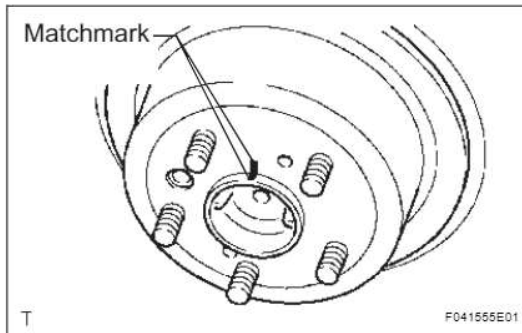
1. INSTALL PARKING BRAKE SHOE ADJUSTING HOLE PLUG

2. INSTALL REAR DISC

- (a) Align matchmarks and install the disc.

HINT:

When replacing the disc with a new one, select the installation position where the disc has the minimum runout.



3. CHECK DISC RUNOUT

- (a) Check the bearing play in the axle direction and check the axle hub runout (see page [AH-17](#)).
- (b) Temporarily install the disc to the hub with the hub nuts.
- (c) Using a dial indicator, measure the disc runout 10 mm (0.39 in.) away from the outer edge of the disc.

Maximum disc runout:

0.15 mm (0.0059 in.)

If the runout is greater than the maximum, change the installation positions of the disc and axle so that the runout will become minimal.

If the runout is greater than the maximum when the installation positions are changed, grind the disc.

If the disc thickness is less than the minimum, replace the disc.

- (d) Remove the hub nuts.

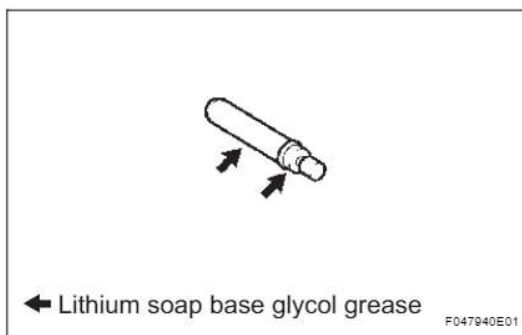
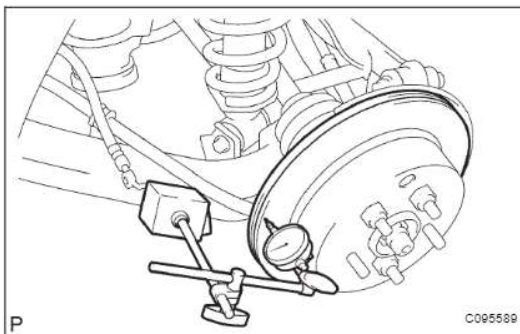
4. ADJUST PARKING BRAKE SHOE CLEARANCE (See page [PB-19](#))

5. INSTALL REAR DISC BRAKE CYLINDER MOUNTING LH

- (a) Install the cylinder mounting with the 2 bolts.
Torque: 47 N*m (475 kgf*cm, 34 ft.*lbf)

6. INSTALL REAR DISC BRAKE CYLINDER SLIDE PIN

- (a) Apply lithium soap base glycol grease to the sliding part of the cylinder slide pin (upper).
- (b) Using a socket hexagon wrench (8 mm), install the cylinder slide pin (upper) to the cylinder mounting.
Torque: 39 N*m (400 kgf*cm, 29 ft.*lbf)



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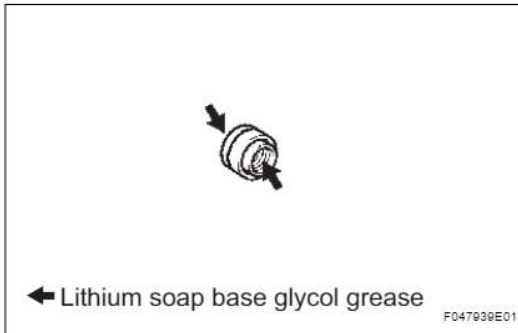
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BRAKE – REAR BRAKE



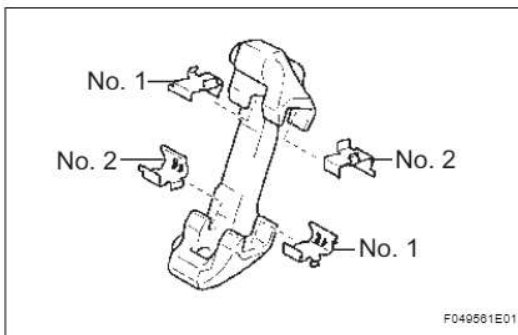
7. INSTALL REAR DISC BRAKE CYLINDER SLIDE BUSH

- Apply lithium soap base glycol grease to the sliding part of a new cylinder slide bush.
- Install the cylinder slide bush to the brake cylinder.



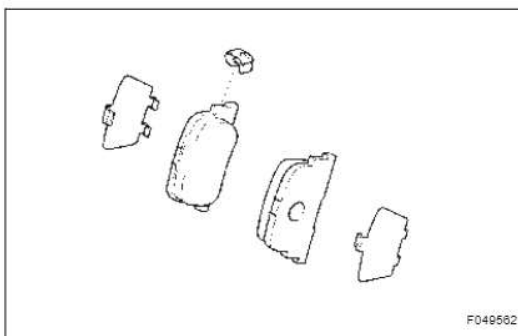
8. INSTALL REAR DISC BRAKE BUSH DUST BOOT

- Apply lithium soap base glycol grease to a new dust boot.
- Install the dust boot to the cylinder slide pin (upper).



9. INSTALL REAR DISC BRAKE PAD SUPPORT PLATE

- Install the 4 support plates (No. 1 and No. 2) to the cylinder mounting.



10. INSTALL REAR DISC BRAKE ANTI SQUEAL SHIM

- Install the 2 anti squeal shims to each pads.

NOTICE:

- When replacing worn pad, the shims must be replaced together with the pads.
- Install the shims in the correct positions and direction.

- Install the pad wear indicator plate to the pad (inner).

NOTICE:

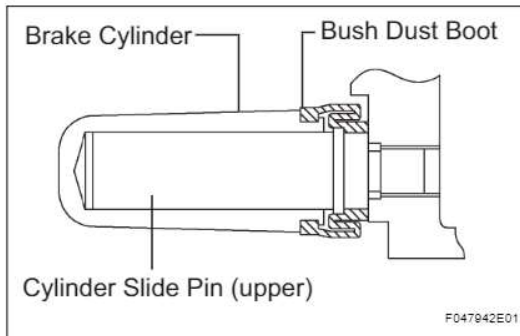
Install the pad wear indicator plate in the correct position and direction.

11. INSTALL REAR DISC BRAKE PAD

- Install the 2 pads (with anti squeal shims) to the cylinder mounting.

NOTICE:

There should be no oil or grease on the friction surface of the pads and disc.

BRAKE – REAR BRAKE**BR-39****12. INSTALL REAR DISC BRAKE CYLINDER ASSEMBLY LH****NOTICE:**

Make sure that the dust boot is installed correctly as shown in the illustration.

13. INSTALL REAR DISC BRAKE CYLINDER SLIDE PIN

(a) Install the cylinder slide pin (lower).

Torque: 34 N*m (350 kgf*cm, 25 ft.*lbf)

14. CONNECT REAR LH FLEXIBLE HOSE

(a) Connect the flexible hose with the union bolt and a new gasket.

Torque: 30 N*m (310 kgf*cm, 22 ft.*lbf)

HINT:

Install the flexible hose lock securely in the lock hole in the brake cylinder.

15. FILL RESERVOIR WITH BRAKE FLUID (See page [BR-3](#))**16. BLEED AIR FROM BRAKE MASTER CYLINDER (See page [BR-3](#))****17. BLEED AIR FROM BRAKE LINE (See page [BR-4](#))****18. CHECK BRAKE FLUID LEVEL IN RESERVOIR (See page [BR-4](#))****19. CHECK FOR BRAKE FLUID LEAKAGE****20. INSTALL REAR WHEEL**

Torque: 103 N*m (1,050 kgf*cm, 76 ft.*lbf)

BR